The Massachusetts Fire Problem

Annual Report of the Massachusetts Fire Incident Reporting System

2007

Deval L. Patrick
Governor

Kevin M. Burke
Secretary of Public Safety & Security

Stephen D. Coan
State Fire Marshal

Thomas P. Leonard
Deputy State Fire Marshal

ABOUT THE COVERS

The original drawings shown on the front and back covers are the year 2008 First and Second Place winning entries of the 26th Annual Statewide Arson Watch Reward Program Poster Contest, sponsored by the Massachusetts Property Insurance Underwriting Association (FAIR Plan), on behalf of all property and casualty insurance companies of Massachusetts. This year's poster theme was **"WAKE UP AND FACE THE FACTS – CARBON MONOXIDE / SMOKE DETECTORS SAVE LIVES."**

A countywide contest was held for all students in grade 6-8. Coordinators from each county held individual countywide contests where they chose First and Second Place winners. All First Place County Winners had their posters submitted to Massachusetts Property Insurance Underwriting Association for entry into the Massachusetts Statewide contest. First, Second and Third Place State winners were announced at an Award Ceremony held at the Sheraton Framingham Hotel on May 28, 2008.

The front cover shows a drawing submitted by Joshua Gardner, a student at the Adams Memorial Middle School, Adams, Massachusetts. Joshua's poster was chosen as First Place Winner in the Berkshire County Poster Contest, and as a result, was automatically entered into the statewide contest, along with 7 other county winners, where it was chosen as the First Place Statewide Winner.

The back cover shows a drawing submitted by Kacie Clinton, a student at the Bellingham Memorial Middle School, Bellingham, Massachusetts. Kacie's poster was chosen as First Place Winner in the Norfolk County Poster Contest, and as a result, was also automatically entered into the statewide contest where it was chosen as the Second Place Statewide Winner.

The Massachusetts FAIR Plan has generously sponsored the printing of the 2007 Annual Report of the Massachusetts Fire Incident Reporting System (MFIRS), as well as, the use of the first and second place posters for the covers, for the last 25 years.

Massachusetts Fire Incident Reporting System

2007 Annual Report

Publication Number: DFS-09-057-01 – 203 – 800 – 2/09 – DFS
Approved by Ellen Bickelman, State Purchasing Agent

Stephen D. Coan, State Fire Marshal
Commonwealth of Massachusetts • Department of Fire Services
Post Office Box 1025 State Road • Stow, Massachusetts 01775
Telephone (978) 567-3300 • Facsimile (978) 567-3199

This report is also available in an electronic format through the Fire Data section of the Department of Fires Services website:

www.mass.gov/dfs/osfm/firedata/mfirs/index.htm

Fireman's Prayer

When I am called to duty, God
Wherever Flames may rage
Give me the strength to save some life
Whatever Be its age
Help me embrace a little child
Before it is too late
Or save an older person from
The horror of that fate
Enable me to be alert and
Hear the weakest shout
And quickly and efficiently
To put the fire out
I want to fill my calling and
To give the best in me
To guard my every neighbor
And protect their property
And if according to your will
I have to lose my life
Please bless with your protecting hand
My children and my wife

-Unknown

Foreword from the State Fire Marshal

Our Mission: *The mission of the Department of Fire Services is to provide the people of Massachusetts the ability to create safer communities through coordinated training, education, prevention, investigation, emergency response and leadership.*

November 2007

This is the *2007 Annual Report of the Massachusetts Fire Incident Reporting System* (MFIRS) which summarizes the Massachusetts fire experience for 2007. It is based on the 33,522 individual fire reports submitted by members of 351 fire departments and fire districts. It is this effort that makes it possible to look at the total fire experience, to identify our fire problems and to develop strategies to address these issues. One of the goals of the Office of the State Fire Marshal is to provide the fire service and the public with accurate and complete information about the fire experience in Massachusetts.

Civilian Fire Deaths Up 39% from All Time Low

Sixty-one (61) civilians died in 48 Massachusetts fires during 2007. Civilian deaths increased by 17, or 39%, from the record low of 44 fire deaths in 2006. The majority of these victims died at night, while they were sleeping and did not have working smoke detectors or residential sprinklers. It is also important to remember that detectors only provide an early warning of a fire. They do not guarantee an escape. Residential sprinklers provide the best opportunity to safely escape from a fire in your home. It is also important to make and practice an escape plan.

3 Fire Related Firefighter Deaths in 2007

In 2007, there were three fire-related fire service fatalities in the Commonwealth of Massachusetts. Two (2) Boston firefighters died while fighting a restaurant fire and a Lowell firefighter died after responding to a small fire in a vacant apartment building.

Disturbing Trend – Fire Deaths from Murders & Suicides.

In 2007, there were seven fatal fires that were murders, suicides or murder/suicides. These seven fires caused 10 deaths. Three (3) of these fires and six of the deaths were related to acts of domestic violence; one was a murder and the other two were murder/suicides; two of these victims were children and two others were former girlfriends. One victim was killed after her assailant had set her body on fire believing that she was already dead by strangulation. Three (3) Massachusetts residents successfully committed acts of self-immolation on themselves in three separate fires.

Our annual reports have measured the overall declining trend in fire deaths, and we're making substantial progress. They have also measured the positive impact of smoke alarms in reducing fire deaths and multiple deaths in fires, as well as the impact of smoking laws and tobacco control programs on reducing fires and fire deaths. The Student Awareness of Fire Education Program (S.A.F.E.) has had the planned impact of reducing child fire deaths. Seniors own the fastest growing share of our population, so our prevention efforts must be expanded to include them, not just shift existing resources to them.

Our relentless goal is to reduce the deaths, injuries and damage fires do in the Commonwealth, and to send each and every firefighter home safely at the end of the day.

We must continue to fund and strengthen our code compliance efforts, and use enforcement tools when necessary. An important part is educating the public as to why fire codes are in place. We must continue to educate the public at every stage of their lives as to what they can do to prevent a fire and to survive the ones that will occur.

Safe Neighborhoods Chemical Initiative
In order to make catastrophes like the Danversport explosion of 2006 less likely in the future, a new inspection program was created. Through the new Safe Neighborhoods Chemical Initiative, teams of inspectors from the Massachusetts Department of Environmental Protection (DEP) and the Department of Fire Services (DFS) were joined by local fire departments in conducting hazard assessments at predominantly small to mid-sized facilities that were deemed to pose a significant danger to populations in the event of a problem or accident. This new initiative initially identified some 40 facilities across the Commonwealth for inspection based on proximity to densely populated areas or to sensitive populations, types or amounts of waste materials used and stored, and past history at the site.

Self-Extinguishing Cigarettes a Reality in Massachusetts
The Reduced Ignition Propensity (RIP) legislation or 'fire safe cigarette' law making it mandatory for cigarette manufacturers to start selling only the self-extinguishing type of cigarettes in Massachusetts took effect on January 1, 2008. By August of 2008 all of the states bordering Massachusetts will be selling self-extinguishing cigarettes; and by January 1, 2009 every state in the Northeast and Mid-Atlantic regions will only sell consumers these types of cigarettes.

Next Steps - Sprinklered Nightclubs
November 15, 2007 was the deadline for certain bars and nightclubs to complete the installation of sprinklers. While it is personally frustrating that not all installations were complete on that day, many more are well under way. In many ways, installing sprinklers in nightclubs was the unfinished business of the Cocoanut Grove fire and 2007 was the 65th anniversary of that tragedy. The requirement to retrofit certain bars and nightclubs with sprinklers was part of the Massachusetts Fire Safety Act passed in 2004 as a result of the Station Nightclub fire in Rhode Island that killed and injured so many from Massachusetts.

We also wish to recognize the efforts of the staff of the Fire Data and Public Education Unit, Jennifer Mieth, manager; Derryl Dion, research analyst; Pavel Gorelik, programmer; and Usha Patel, data entry clerk, within the Office of the State Fire Marshal who manage the Massachusetts Fire Incident Reporting System and prepared this report.

We would like to thank the Massachusetts Property Insurance Underwriting Association for printing this report and for their support throughout the year. We also wish to thank Governor Deval L. Patrick, and Public Safety and Security Secretary Kevin M. Burke for their commitment and support to the Massachusetts fire service through the Department of Fire Services.

Stephen D. Coan
State Fire Marshal

Table of Contents

Executive Summary 3

Massachusetts Fire Departments 6

Non-Fire Incidents 9

Fires by Incident Type 11

Structure Fires 15
- Building Fires 15
- 2007 Massachusetts Building Fires by Property Use 19
- Residential Building Fires 29
  - Fires in One- and Two-Family Homes 35
  - Multifamily Home Fires 38
  - Rooming House Fires 41
  - Hotel and Motel Fires 45
  - Residential Board & Care Fires 48
  - Dormitory Fires 50
- Restaurant Fires 53
- School Fires 57
- Fires in Hospitals 61
- Nursing Home and Rest Home Fires 64
- Office Building and Bank Fires 67
- Vacant Building Fires 70

Motor Vehicle Fires 77

Outside and Other Fires 81

2007 Massachusetts Fire Deaths 82
- Civilian Fire Deaths 82
- Structure Fire Deaths 88
  - Residential Building Fire Deaths 89
- Fatal Motor Vehicle Fires 104
- Other Fatal Fires 106
- Multiple Fire Deaths 107
- Civilian Fire Deaths - Conclusion 107

Civilian Injuries 109
- Structure Fire Injuries 109
- Motor Vehicle Fire Injuries 115
- Outside and Other Fire Injuries 115

2007 Firefighter Deaths 118

Fire Service Injuries 119

Arson Fires 125
Structure Arson 128
Motor Vehicle Arson 131
Outside and Other Arson 132

Juvenile-set Fires 134

Cooking Fires 137

Fires Caused by Smoking 139

Heating Equipment Fires 144
Central Heating Units 146
Chimney Fires 146
Fixed Heater Fires 147
Fires Caused by Hot Water Heaters 148
Fires Caused by Fireplaces 149
Space Heater Fires 149
Portable Space Heater Fires 149
Fires Caused by HVAC, Other 150

Electrical Fires 151
Electrical Equipment Fires 152

Candle Fires 156

Clothes Dryer Fires 159

Fireworks Incidents 160

Grill Fires 161

Carbon Monoxide Incidents 163

Mapping the Fire Experience 165

Appendices

Fire and Arson Experience by Community 174
Fires and Arsons by Incident Type 196
Fires and Arson by County 197
Fires, Arson and Deaths by County and by Incident Type 198
Non-Fire Responses by County and by Incident Type 199
M.G.L. Chapter 148 § 26 G - Sprinklers in Building or Additions 200
M.G.L. Chapter 148 § 26 H - Sprinklers in Boarding and Lodging Houses 202
M.G.L. Chapter 148 § 26 I – Sprinklers in New Dwelling Units (4+ units) 203

Executive Summary

"All…fires or explosions by which a loss is sustained shall be reported… to the State Fire Marshal on forms furnished by the department, and shall contain a statement of all facts relating to the cause and origin of the fire or explosion that can be ascertained, the extent of damage thereof, the insurance upon the property damaged, and such other information as may be required."

-Massachusetts General Laws, Chapter 148, Section 2.

Civilian Fire Deaths Up 39% from All Time Low
Sixty-one (61) civilians died in 48 Massachusetts fires during 2007. Civilian deaths increased by 17, or 39%, from the record low of 44 in 2006. Twenty-nine (29) men, 25 women, and seven children died in Massachusetts' fires. Of the 61 civilian deaths in fires in 2007, 40 occurred in residential structure fires and seven occurred in non-residential structure fires. Sixty-six percent (66%) of civilians died in the "safety" of their own homes. The majority of these victims died at night, while they were sleeping and did not have working smoke detectors or residential sprinklers. It is also important to remember that detectors only provide an early warning of a fire. They do not guarantee an escape. Residential sprinklers provide the best opportunity to safely escape from a fire in your home. It is also important to make and practice an escape plan.

Ten (10) deaths occurred in seven motor vehicle fires in 2007. Four (4) people died in four other fires in 2007.

3 Fire Related Firefighter Deaths in 2007
In 2007, there were three fire-related fire service fatalities in the Commonwealth of Massachusetts. Two (2) Boston firefighters died while fighting a restaurant fire and a Lowell firefighter died after responding to a small fire in a vacant apartment building.

16,722 Structure Fires, 3,317 Vehicle Fires, 13,483 Outside & Other Fires in 2007
There were 33,522 fire and explosion incidents reported by fire departments to the Massachusetts Fire Incident Reporting System (MFIRS) in 2007. The 16,722 structure fires, 3,317 motor vehicle fires, and 13,483 outside and other fires caused 61 civilian deaths, three fire service deaths, 394 civilian injuries, 675 fire service injuries, and an estimated dollar loss of $287 million in property damages. In 2007 there were 1.8 civilian deaths for every 1,000 fires.

All Fires Up in 2007
The total number of reported fires increased by 11% from 30,324 in 2006 to 33,522 in 2007. Structure fires rose 7% from 2006 to 2007. From 2006 to 2007, motor vehicle fires increased by 1%. Outside, brush, and other fires increased by 18% during the same time period.

Although the law states that only fires where a loss is sustained must be reported, many fire departments are wisely reporting all of the fire incidents that they respond to, giving a

more accurate picture of the fire problem in Massachusetts. Many departments are also reporting the non-fire calls to which they respond. Emergency medical and rescue calls represent over half, or 53%, of the 645,853 total responses that were reported MFIRS in 2007.

Cooking Was the Leading Cause of Residential Building Fires
Over half, 55%, of all residential building fires were caused by unattended and other unsafe cooking practices in 2007. Fifty-eight percent (58%) of residential fires originated in the kitchen.

Once Again Smoking Fires Are the Leading Cause of Fire Deaths
In 2007, smoking fires were the leading cause of residential building fire deaths. These fires accounted for 17, or 43%, of residential fire deaths. For years, smoking has been far and away the leading cause of fatal fires and fire deaths in Massachusetts. In 1999, cooking and smoking tied as the leading causes of fires that kill. In 2005, electrical fires were the leading cause of residential fire deaths, but smoking remained the leading cause of fatal residential fires. Because a fire can kill more than one person it is important to look at the causes of both fatal fires and fire deaths.

Detectors Operated in Over 1/2 of Fires
Smoke or heat detectors operated in 7,638, or 56%, of the residential building fires in 2007. Detectors, in confined fires, did not alert the occupants in 10% of these fires. Detectors were present but did not operate in 2% of these incidents. In 3% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 3% of the residential fires. Smoke detector performance was undetermined in 3,460 incidents, or 26% of Massachusetts' 2007 residential building fires.

Detectors Operated in 57% of Building Fires that Caused Injuries
Detectors operated in 57%, of the structure fires that caused injuries. This may be because when the occupant is alerted to the presence of the fire; they may try to extinguish it themselves and injure themselves during this task or during the escape after the situation has considerably worsened. When alerted to the presence of a fire, occupants should vacate the building and notify the fire department as soon as possible, letting the professionals with the proper training and gear extinguish the fire.

Overall Arson Down 4%
One thousand two hundred and thirteen (1,213) Massachusetts fires were considered arson in 2007. The 344 structure arsons, 130 vehicle arsons, and 739 outside and other arsons caused 12 civilian deaths, 25 civilian injuries, 32 fire service injuries, and an estimated dollar loss of $14.8 million. This is a 4% decrease in arson from the 1,264 reported in 2006.

Structure arsons rose by 6%, while motor vehicle arsons fell 18% from 2006 to 2007, although since 1987, motor vehicle arson has fallen 97%. The steady decline of motor vehicle arsons can be explained by the enactment of the Burned Motor Vehicle Reporting Law, which took effect in 1987, and requires owners of burned motor vehicles to

complete and sign a report which must also be signed by a fire official from the department in the community where the fire occurred before they can collect on their fire insurance. Outside and other arsons decreased by 5%.

Almost 1/2 of All Vacant Building Arsons Occurred in Unsecured Buildings
Forty-seven percent (47%) of all vacant building arsons in 2007 occurred in unsecured vacant buildings. Twenty-six percent (26%) occurred in secured, vacant buildings; while 16% happened in idle buildings that are not routinely used. Buildings under construction accounted for 7% of vacant building arsons. Buildings under major renovation accounted for 4% of the vacant building arsons in 2007. One of the most dangerous types of fires for firefighters in 2007 was vacant building fires. On average there was one firefighter injury for every six vacant building fires.

Almost 1/4 of School Fires Were Intentionally Set
Cooking was the leading cause of the 222 fires in schools in 2007, causing 31% of these fires. Indoor rubbish fires, for which no causal information is collected, accounted for 21%, or just over one-fifth of school fires. Nearly one quarter, or 24%, of school fires, were reported as intentionally set, and an additional 6% were reported as juvenile-set fires. It is unknown, but likely, that many of the intentionally set fires involved people under the age of 18.

Conclusion
Most people die in fires at night in the so-called safety of their own home. While the overall trend in the number of deaths continues to decline, although not in this year, smoking is still the leading cause of all fatal fires. Cooking is something that we do everyday but it is still the leading cause of fires in the home and the leading cause of civilian fire injuries and we must all work to address this problem.

The lack of working smoke alarms or automatic extinguishing systems are contributing factors to these tragedies. It is important to remember that properly maintained detectors provide an early warning of a fire, and residential sprinklers provide the opportunity to safely escape. It is important to make and practice an escape plan.

Massachusetts Fire Departments

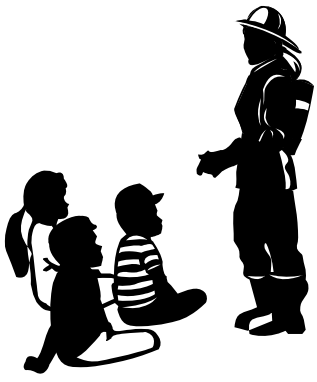
Today's firefighters do far more than fight fires. Many are emergency medical technicians or paramedics. All firefighters must be trained to offer first aid if they arrive first at an emergency. They are the first ones called to deal with hazardous materials incidents ranging from the suspected presence of carbon monoxide to a leaking propane truck. They may be called to rescue a child that fell through the ice or that locked himself in the bathroom. They get people out of stuck elevators and wrecked cars. They test and maintain their equipment, ranging from self-contained breathing apparatus to hydrants to hoses and trucks. They know the basics of construction, electricity and chemistry. Some undertake the calling of fire prevention and become inspectors or public fire educators. They report their fire incidents through the Massachusetts Fire Incident Reporting System so we can spot trends, problems and successes.

When most people think of the fire department, they think of fire trucks, sirens and flames. Actually, the fire department aims to prevent fires. If prevention failed, then the alarm comes in and the trucks roll.

Fire Department Enforces M.G.L. Chapter 148 and 527 CMR
The fire department is legally required to enforce the provisions of 527 Code of Massachusetts Regulations (CMR). This contains regulation sections on fireworks, dry cleaning, oil burners, gas stations, liquid propane, plastics, transportation of flammable liquids, above ground and underground storage tanks, electrical systems, explosives, storage of flammable substances, marine fueling, model rockets, lumber yards, bulk plants, tentage, salamanders, flammable decorations and curtains, cannon or mortar firing, fire extinguishers, smoke detectors, obstructions and hazards, combustible fibers, rubbish handling, crop ripening, pesticide storage, welding and storage, carbon monoxide, and unvented appliances. The fire department must also enforce the laws contained in Massachusetts General Law Chapter 148.

Inspectors must know the regulations they are enforcing and they must know how to apply the regulations to situations in the community. They must communicate information about weaknesses in plans they review and educate people on violations and perform follow-up inspections. Just as firefighters are sent to the Massachusetts Firefighting Academy to learn the principles of suppression, fire prevention personnel must go to classes to learn the ins and outs of the regulations. These functions also produce a corresponding amount of documentation that must be maintained.

Firefighters Teach the Community Fire and Burn Prevention
Firefighters go out in the community to teach children, seniors and interested community groups how to protect themselves from fire and burns. The statistics in this report are critical to these educators in developing injury prevention programs.



The S.A.F.E. Program

The Student Awareness of Fire Education or S.A.F.E. program was implemented in fiscal year 1996. The Legislature appropriated $1,078,666 to fund public fire education grants. These grants provide local fire departments with funding to educate children about the dangers associated with fire, particularly fires caused by smoking. Any city or town whose fire department is committed to working with school systems, public health or other community agencies to develop a well conceived and coordinated fire safety education program message is invited to apply for these grants. In fiscal year 2008, 219 fire departments shared the $1,078,666 in S.A.F.E. funding.

Merrimac Young Hero – Kayley Judson

On August 15, 2007 at 11:46 a.m., 6-year old Kayley Judson was at home when she discovered that her 2-year old brother had accidentally turned on a stove burner that ignited a cloth rag. Kayley immediately told her mother that she was taking her brother and 4-month old sister out of the house to their family's meeting place. Meanwhile, Kalyey's mother turned off the stove burner, evacuated the house, and called 9-1-1. Kayley and her family were waiting safely outside their house when the Merrimac Fire Department arrived at their home. Kayley learned her S.A.F.E. education the year before at Merrimac's 2006 Fire Department Open House during Fire Prevention Week as well as through Sweetsir Elementary School's Fire Prevention Month activities.

Lt. Neil Hawley Named Public Fire & Life Safety Educator of the Year

Lt. Neil Hawley received the 2007 Public Fire & Life Safety Educator of the Year Award at the 13th annual Public and Life Safety Education Conference. He is the sole public fire educator in the Springfield Fire Department, which protects a community of 152,000 and became a certified fire and life safety educator in 2004. He works easily with all segments of his community: preschoolers, grade schoolers, teenagers, scouts, older adults, the business community, and people with disabilities or special challenges. He has been a local recipient of the Liberty Mutual Firemark Award. Whether he is donating a week of his own vacation time to the local scouts, reaching out to recent Somali immigrants, bringing Sparky to the library for evening discussion, or mentoring fellow fire educators, Lt. Hawley continues to enthusiastically protect his community through education as he prepares to retire from the fire service.

91 MA Departments Receive $11.2 Million in Federal Grants

In the sixth year of the Federal Assistance to Firefighter Grant program, 91 Massachusetts fire departments received $11.2 million. Eighty (80) departments received $6.9 million for fire operations and firefighter safety. Eleven (11) departments received $4.3 million for the purchase of firefighting vehicles.

Two (2) Massachusetts Fire Departments received fire prevention grants totaling $46,013. Nine (9) fire departments were awarded $4 million in SAFER grants that allow for the hiring of more firefighters.

98.4% of Massachusetts Fire Departments Participated in MFIRS

By law, fire departments are required to report any fire or explosion resulting in a human casualty or dollar loss to the Office of the State Fire Marshal. This is done through the Massachusetts Fire Incident Reporting System (MFIRS). Three hundred fifty-one (351), or 96.2% of Massachusetts Fire Departments reported at least one fire during 2007. Eight (8), or 2.2 %, certified that they had no fires that met the criteria. As an added incentive to comply with the law, a community had to be participating in MFIRS to be eligible for the federal FIRE Act and SAFER grants.

More and more departments are automating fire incident reporting and other department functions. In 2007, 290, or 79%, of Massachusetts' fire departments submitted their data electronically.

Expanded Possibilities With Version 5

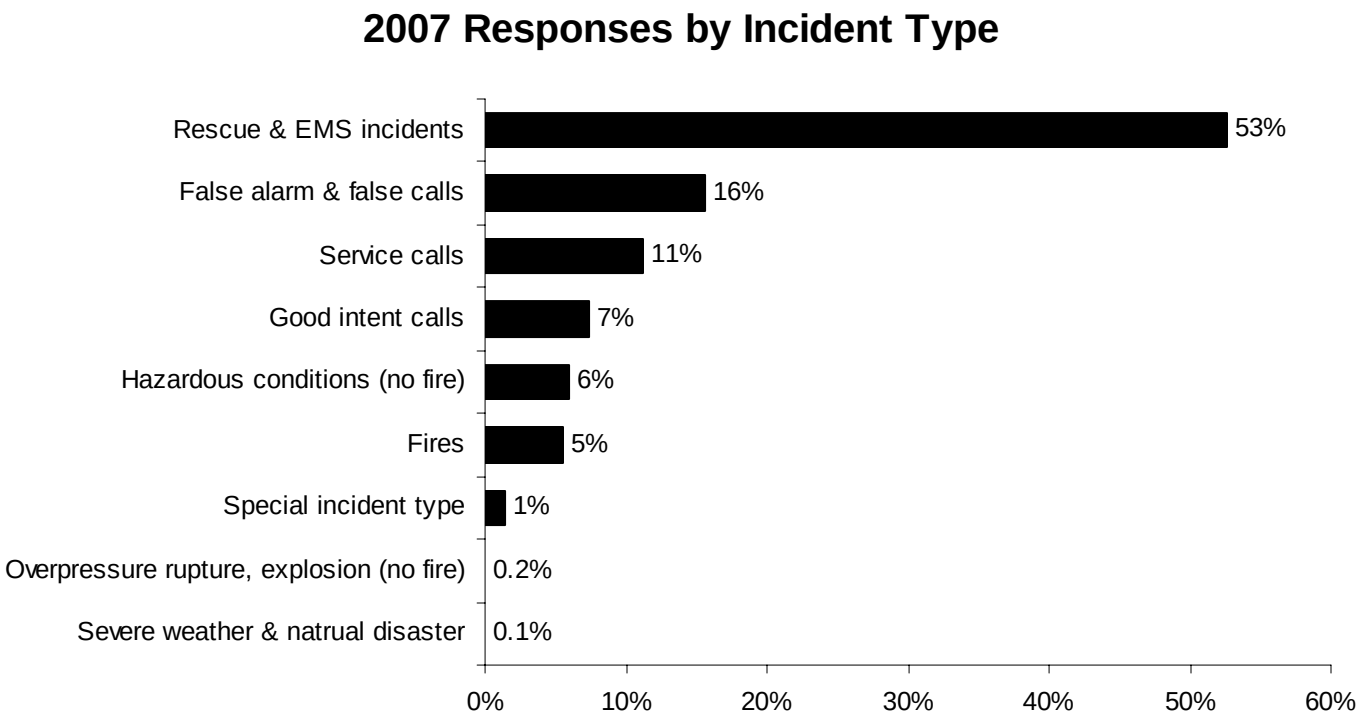
2007 is the sixth full year that fire incident reports were submitted and analyzed using version 5 reporting format and data codes. This new version of the reporting system allows us a greater opportunity to complete a more in-depth analysis of the fire problem in Massachusetts.

Non-Fire Incidents

Fire Departments Do More Than Just Fight Fires
Massachusetts fire departments do much more than just fight fires. Over the past couple of decades they have branched out and taken on the added responsibilities for EMS responses, multiple types of specialized rescues, hazardous materials incidents, responding during and after natural disasters, as well as the typical service calls, good intent calls, false alarms and the special types of incidents that do not fit neatly into any of the other categories. These numbers have risen as more fire departments automate their reporting and have voluntarily reported all of their incidents to MFIRS.

53% of All Massachusetts Calls Were EMS Incidents
In 2007, 351 fire departments in Massachusetts reported 645,853 responses[1] to MFIRS. Of these 645,853 responses, 610,477 non-fire calls were voluntarily reported.

Of these 610,477 non-fire incidents there were 339,932 (53%) reported rescue and emergency medical services (EMS) calls; 100,490 (16%) reported false alarm or false calls; 72,818 (11%) reported service calls such as lock-outs, water or smoke problem, unauthorized burning or public service assistance; 47,508 (7%) reported good intent calls; 38,549 (6%) reported hazardous condition calls with no fire; 9,199 (1%) reported special incident type calls such as citizen complaints; 1,034 (0.2%) reported overpressure



[1] These figures include responses in which fire departments gave mutual aid to other fire departments.

rupture, explosion or overheat calls with no fire; and 947 (0.1%) reported severe weather and natural disaster incidents.

Thirty-five thousand three hundred and seventy-six (35,376), or 5%, of the total responses submitted by Massachusetts fire departments were fires.

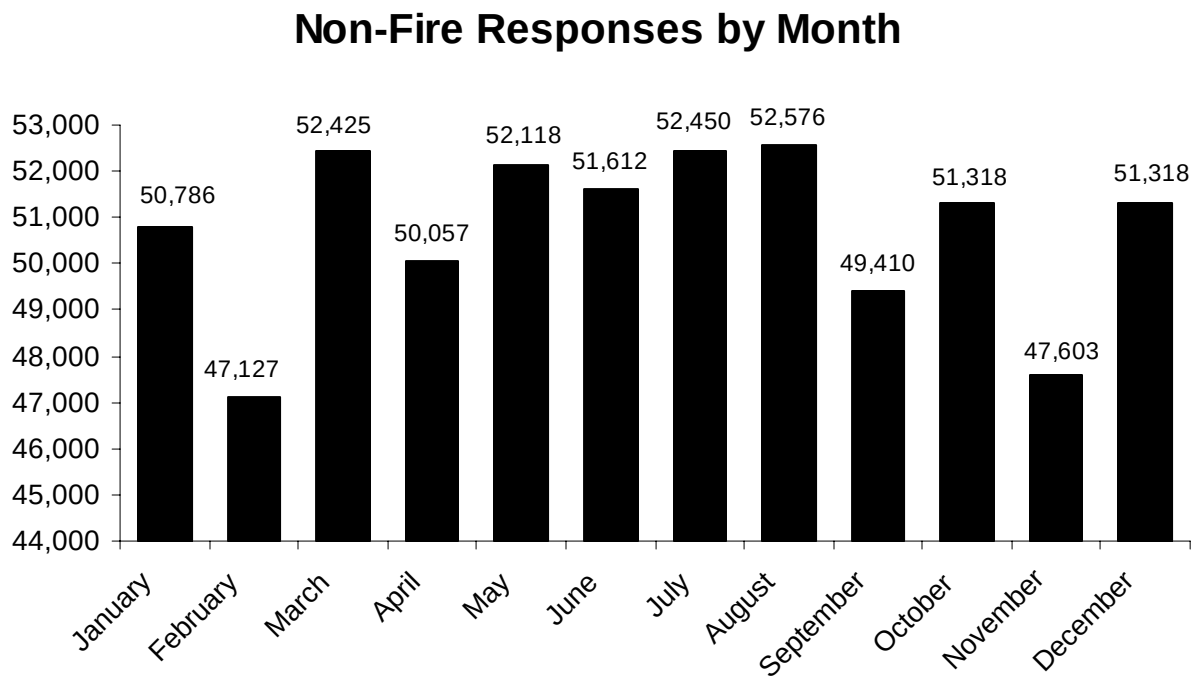
Most Large Cities Voluntarily Reporting All of Their Incidents
Boston, the largest city in the Commonwealth, reported 65,701 non-fire incidents in 2007. The City of Worcester, the second largest city in Massachusetts reported the second most non-fire incidents in 2007, 22,912 incidents. The next five cities in terms of the number of non-fire calls reported were: Lowell, 11,459 calls; Springfield with 10,615; Cambridge, 10,524 calls; New Bedford, 10,466 calls; and Framingham with 8,782 reported non-fire incidents in 2007.

Over Half of All Fire Department Responses Were EMS Calls
Fifty-three percent (53%) of all reported 2007 fire department responses in the Commonwealth were emergency medical service calls. Four of the top five types of all calls were all EMS type incidents. Over one quarter of all reported incidents, or 29%, were non-vehicle accident with injury - EMS calls. Ten percent (10%) were calls where firefighters assisted the EMS crews. Six percent (6%) classified as rescue, EMS call, other. Four percent (4%) of all reported incidents in 2007 were motor vehicle accidents with injuries. The fifth most reported call in 2007 was good intent calls, other, accounting for 3% of all reported incidents.

Middlesex & Suffolk Counties Reported Over 1/3 of All Non-Fire Incidents
Middlesex and Suffolk Counties reported a combined 36% of all non-fire incidents to MFIRS in 2007. Middlesex County reported 22% of these types of incidents and Suffolk County reported 14%. Worcester County submitted the third most non-fire calls totaling 13%of all the 2007 non-fire incidents. Nantucket County reported 2,167 (0.3%) non-fire incidents and Dukes County reported 143 non-fire incidents; accounting for 0.02% of all non-fire incidents reported to MFIRS in 2007.

For a complete breakdown of non-fire incidents by incident type and county refer to the Appendix.

Non-Fire Incidents by Month
August was the month with the most reported non-fire incidents in 2007 (9%), followed by July (9%) and March (9%). February was the month with the least reported non-fire incidents (8%). Statistically these incidents are spread evenly from month to month. Four (4) months each accounted for 9% of the incidents, and eight months each accounted for 8% of the incidents. The average number of monthly reported non-fire incidents in 2007 was 50,733 calls.

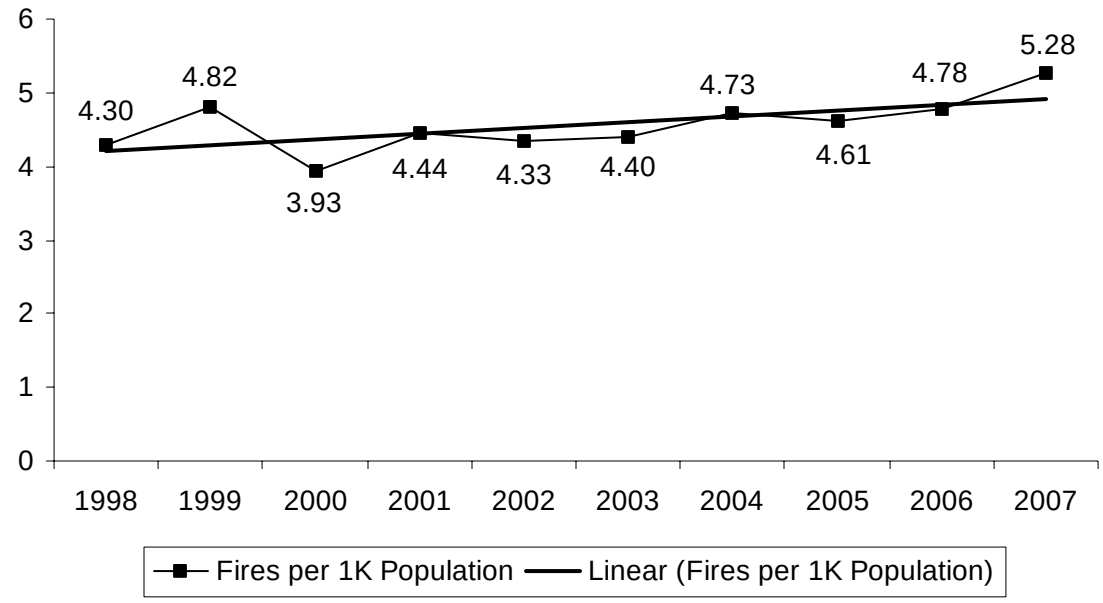


Fires by Incident Type

16,722 Structure Fires, 3,317 Vehicle Fires, 13,483 Outside & Other Fires in 2007
There were 33,522 fire and explosion incidents reported by fire departments to the Massachusetts Fire Incident Reporting System (MFIRS) in 2007. The 16,722 structure fires, 3,317 motor vehicle fires, and 13,483 outside and other fires caused 61 civilian deaths, three fire service deaths, 394 civilian injuries, 675 fire service injuries, and an estimated dollar loss of $287 million in property damages.

The following chart indicates the number of total fires reported per 1,000 citizens in Massachusetts per year from 1998 through 2007. In 2007, there were 5.28 fires for every 1,000 citizens in Massachusetts[2]. A figure like this allows one to compare our fire problem to other states of different sizes. For example in 2007, Oregon reported 3.43 fires for every 1,000 of its citizens[3], and Florida reported 4.28 fires for every 1,000 of its citizens[4]. There were 5.53 fires per 1,000 citizens for the entire United States in 2007.[5] Massachusetts is below the national average of fires per 1,000 citizens by 0.25.

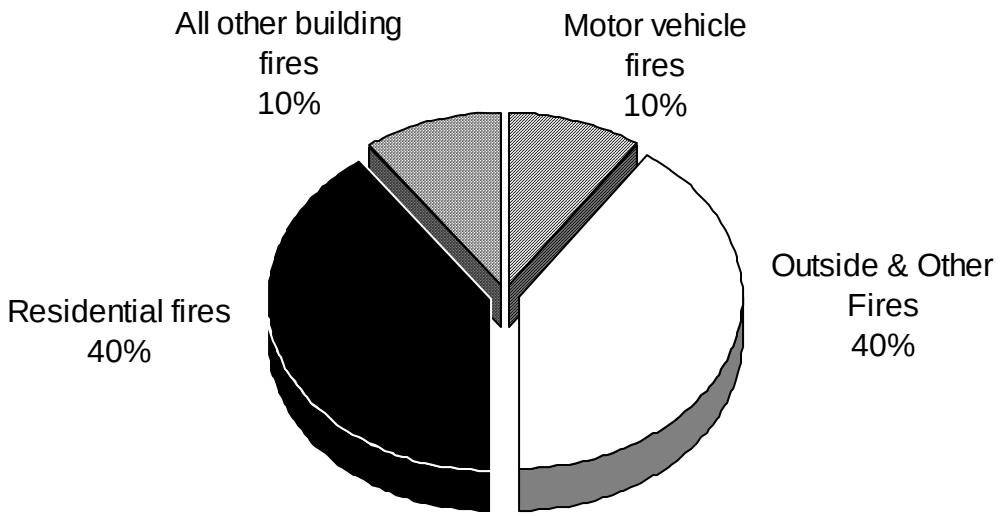
[2] The population figures used were from the 1990 and 2000 U.S. census. For the years 1998 – 1999, the population in MA was said to be 6,016,425 people. For 2000 – 2007, the population figure used was 6,319,097 people.
[3] Oregon State Fire Marshal 2007 Annual Report, 2007 In Review, page 27.
[4] Florida Fires, State Fire Marshal Annual Report 2007, page 62, Summary Statistics.



The following graph depicts the percentage of the major types of fires as part of the whole Massachusetts fire problem. In 2007, 50% of all reported fires were structure fires. The majority of these fires were in people's homes. Forty percent (40%) of all fires in the Commonwealth, and 80% of all structure fires, occurred in someone's home; only 10% of all fires, and 20% of all structure fires, occurred in a type of building other than a residence. Ten percent (10%) were reported motor vehicle fires, while 40% were classified as outside and other fires.

[5] The population used was the national population was 281,421,906 taken from the US Census Bureau's 2000 U.S. Census. The number of fires of 1,642,500 was obtained from **Fire Loss in the United States During 2006,** page I, Karter, Michael J. Jr., National Fire Protection Agency, September 2006.

2007 Fires by Incident Type



16,722 Structure Fires, 47 Civilian Deaths
Massachusetts fire departments reported 16,722 structure fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2007. These fires killed 47 civilians and three firefighters, caused 332 civilian injuries, 564 fire service injuries, and an estimated $268 million in property damage. Structure fires accounted for 50% of the total incidents and 77% of the civilian deaths in 2007. Structure fires were up 7% from 2006. There were 344 structure arsons in 2007. Structure fires in the Massachusetts Fire Incident Reporting System include any fires that occur inside or on a structure.

3,317 Motor Vehicle Fires Account for 11% of Reported Fires
The 3,317 motor vehicle fires caused 10 civilian deaths, 20 civilian injuries, 21 fire service injuries, and $14.8 million in property damage. These incidents accounted for 10% of the reported 33,522 fires in 2007. Motor vehicle fires accounted for 16% of civilian fire deaths. Motor vehicle fires were up 1% from 2006. There were 130 motor vehicle arsons in 2007. According to MFIRS, a motor vehicle fire is defined as one involving a car, truck, boat, airplane, construction equipment or other mobile property that does not occur inside a structure.

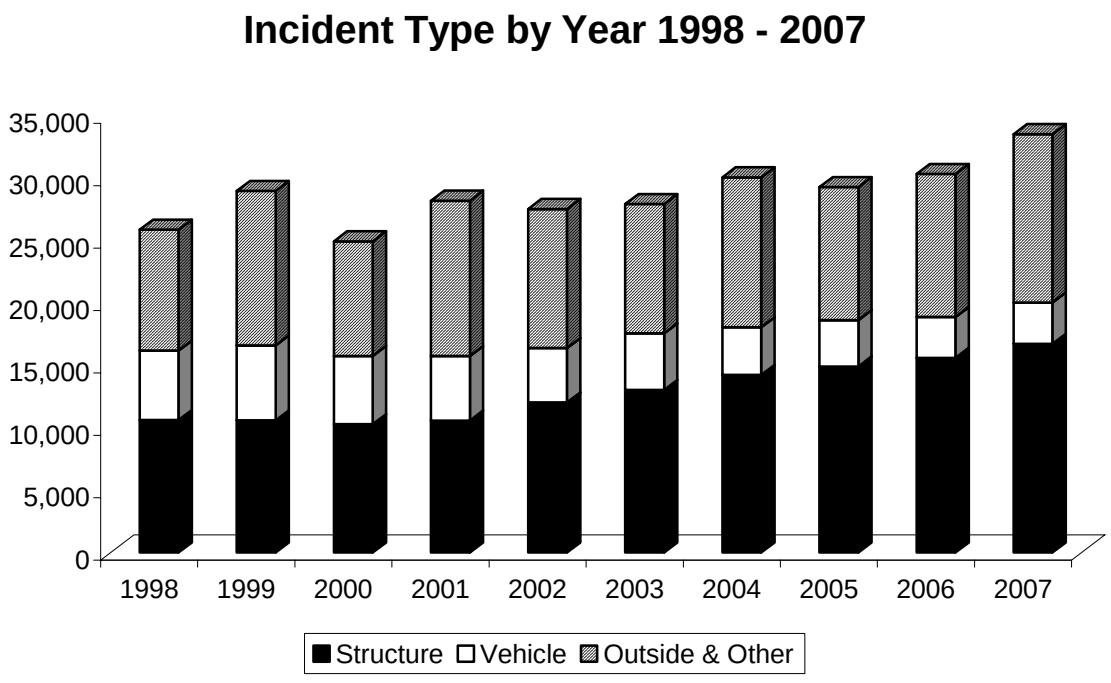
13,483 Brush Fires, Trash Fires, and Other Outside Fires
The 13,483 outside and other fires caused four civilian deaths, 42 civilian injuries, 90 fire service injuries, and an estimated dollar loss of $4.1 million. The 6,602 trees, grass and brush fires, 3,823 outside rubbish fires, 1,058 special outside fires, 91 cultivated vegetation or crop fires, and 1,909 other fires accounted for 40% of the total fire incidents in 2007. These fires were up 18% from the 11,447 such outside and other fire incidents reported in 2006. There were 739 outside and other arsons in 2007. Fire departments are

required to report any fire or explosion resulting in a dollar loss or human casualty to MFIRS. Fires that do not result in a loss may be reported. Many fire departments, particularly those that submit data electronically, voluntarily report these fires. These figures should be considered an underestimate of the "no loss" fire incidents to which fire departments actually responded.

The following table indicates the total number of fires and the subsequent breakdown into structure fires, motor vehicle fires and outside and other fires for the years 1998 through 2007. The total number of fire incidents in 2007 was up 3% from the 30,324 incidents reported in 2006. Fires have been on an overall increasing trend since 2000. This is due to the codes for confined fires inside of structures, Incident Types 113 – 118. In the past many of these confined fires may have been coded as smoke scares or other non-fire types of incidents.

Year	Total Fires	Structure Fires	Vehicle Fires	Other Fires
2007	33,522	16,722	3,317	13,483
2006	30,324	15,607	3,270	11,447
2005	29,272	14,909	3,717	10,646
2004	30,057	14,226	3,831	12,000
2003	27,992	13,024	4,536	10,362
2002	27,519	12,035	4,356	11,128
2001	28,189	10,576	5,165	12,448
2000	24,931	10,279	5,473	9,179
1999	28,976	10,595	6,011	12,370
1998	25,873	10,613	5,565	9,695

The following graph depicts the same numbers in a different manner. It shows what portion of the fire problem each incident type represents. During the first four years of this period (1997-2000) the total number of structure fires decreased. However from 2001



through 2007 the number of structure fires steadily increased. During the past 10 years motor vehicle fires have steadily declined. However, the trend for outside and other fires seems to be developing a 'wave' pattern where the number of these types of fires rises or 'crests' every two to three years.

Structure Fires

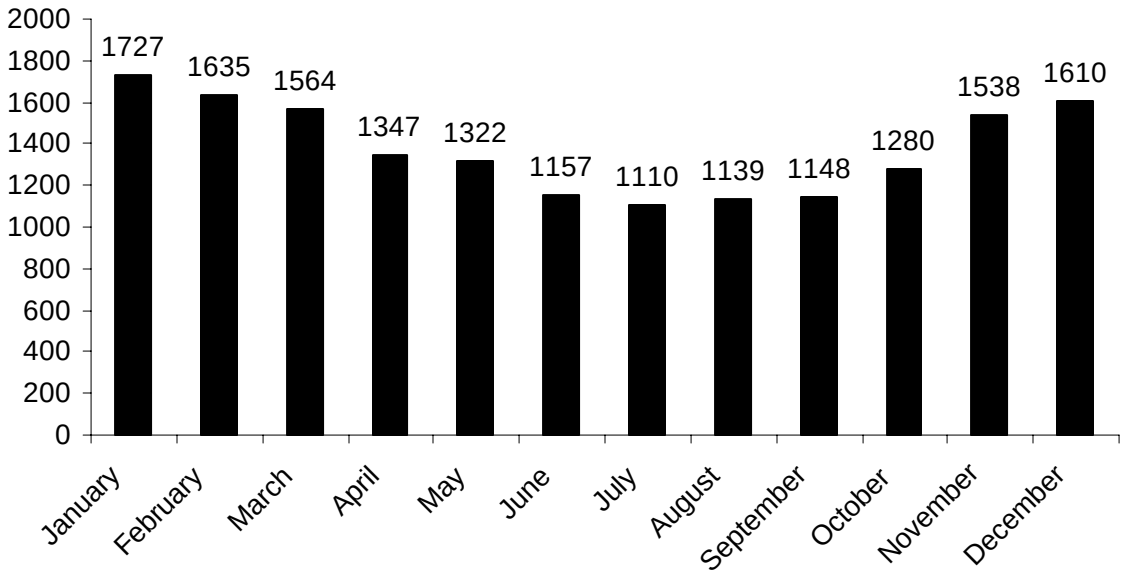
16,722 Structure Fires Account for 50% of Reported Fires, 77% of Fire Deaths
The 16,722 structure fires caused 47 civilian deaths, three fire service deaths, 332 civilian injuries, 564 fire service injuries, and an estimated dollar loss of $268 million. The average structure fire caused $16,037 in property damage. Structure fires accounted for 50% of reported fires and 77% of the civilian fire deaths in 2007.

According to the MFIRS definition, any fire occurring inside or on a structure is considered a structure fire. This includes chimney fires, cooking fires, indoor waste basket fires, fires on a back porch, exterior trim fires, and vehicle fires that occur inside a garage that extend beyond the vehicle. The number of structure fires rose by 7% from the 15,607 reported in 2006.

Building Fires

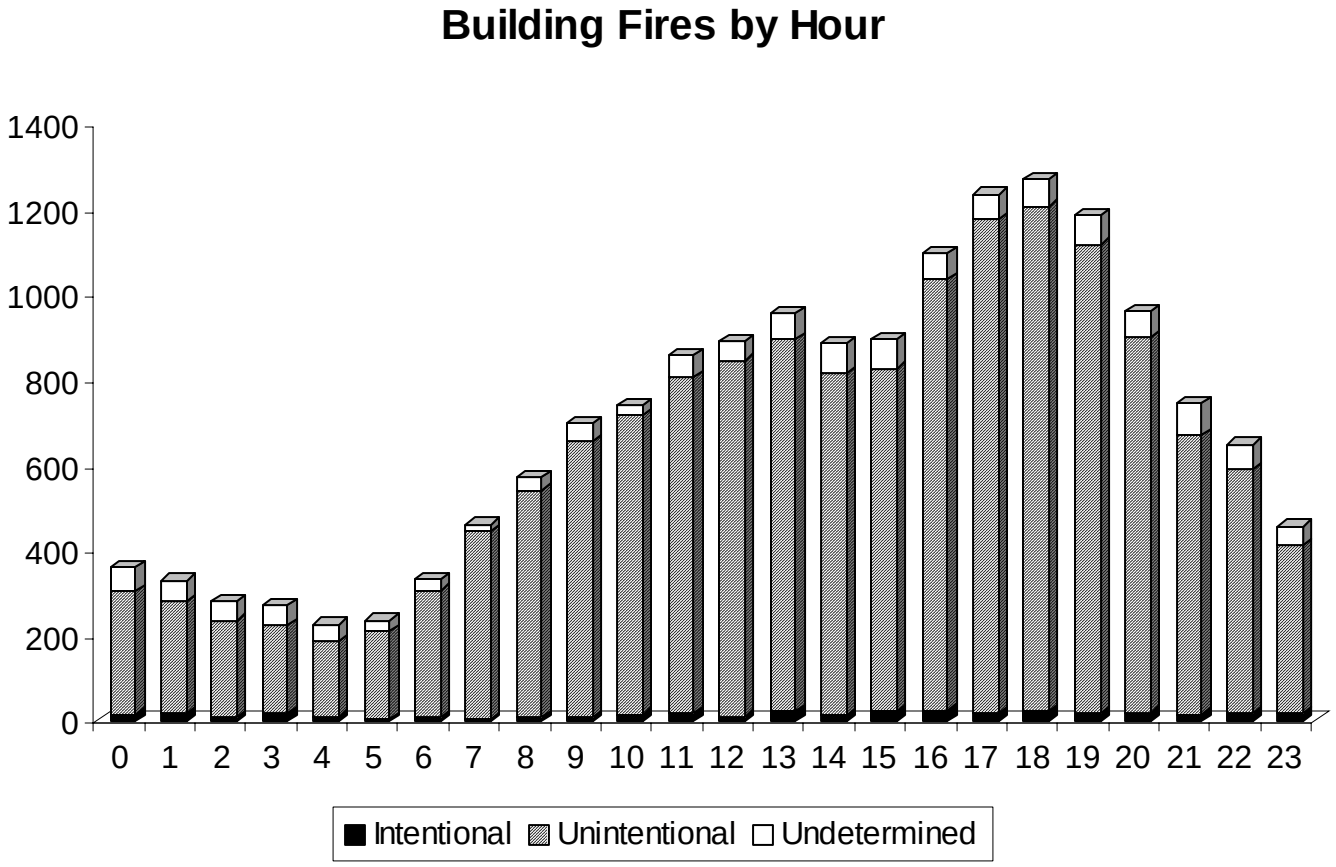
There were 16,574 building fires of different types in Massachusetts in 2007. These 16,574 building fires accounted for 99.8% of all structure fires in Massachusetts.

Building Fires Most Common in Colder Months
Heating equipment is the second leading cause of building fires. It is not surprising that January was the peak month for these incidents in 2007. February ranked second and December had the third largest number of building fires. The warmer months had significantly fewer building fires. The fewest fires occurred in July. August had the second lowest frequency of these incidents, and September had the third lowest number of building fires in 2007.



Building Fires Most Common Around Dinner Time
Cooking is the leading cause of building fires. Predictably, building fires occurred most often around dinnertime. Intentionally set building fires were most common between 5:00 p.m. and 6:00 p.m. and also between 1:00 a.m. and 2 a.m. Unintentional building fires reached their lowest point between 1:00 a.m. and 6:00 a.m. and increased fairly steadily to a peak between 5:00 and 6:00 p.m.

The following graph shows fire frequency by time of day on the 24-hour clock for building arsons, unintentional building fires and building fires of undetermined origin. A fire is considered arson when the ignition factor is incendiary or suspicious. Midnight to 1:00 a.m. is represented by 0, 1:00 a.m. to 2:00 a.m. is represented by 1, etc.



81% of Building Fires Occurred in Residential Occupancies

Eighty-one percent (81%) of the state's 16,574 building fires, 40 of the 47 civilian building fire deaths and one of the three fire service deaths occurred in residential occupancies. The following table shows the number of building fires, civilian deaths, civilian injuries, fire service injuries, estimated dollar loss and the percentage of total building fires for each occupancy group. Institutional properties are those used for purposes such as medical or other treatment of persons suffering from physical or mental illness, disease, or infirmity; for the care of infants, convalescents, or aged persons; and for penal or corrective purposes. Industrial facilities, utilities, defense facilities, laboratories, agricultural and mining facilities, are considered basic industries. Special properties include buildings such as outbuildings, bus stop shelters and telephone booths.

Steam Pipe Explosion in Salem Power Plant Causes Most Fire Deaths

- On November 6, 2007, at 8:50 a.m., the Salem Fire Department was called to a fatal steam pipe explosion at an electric generating plant. The three male victims, ages 20, 41, and 56 were all employees of the plant. All three victims were transported to local hospitals where they died the next day. Detectors operated. No one else was injured in this explosion, and damages were not estimated.

BUILDING FIRES BY OCCUPANCY TYPE

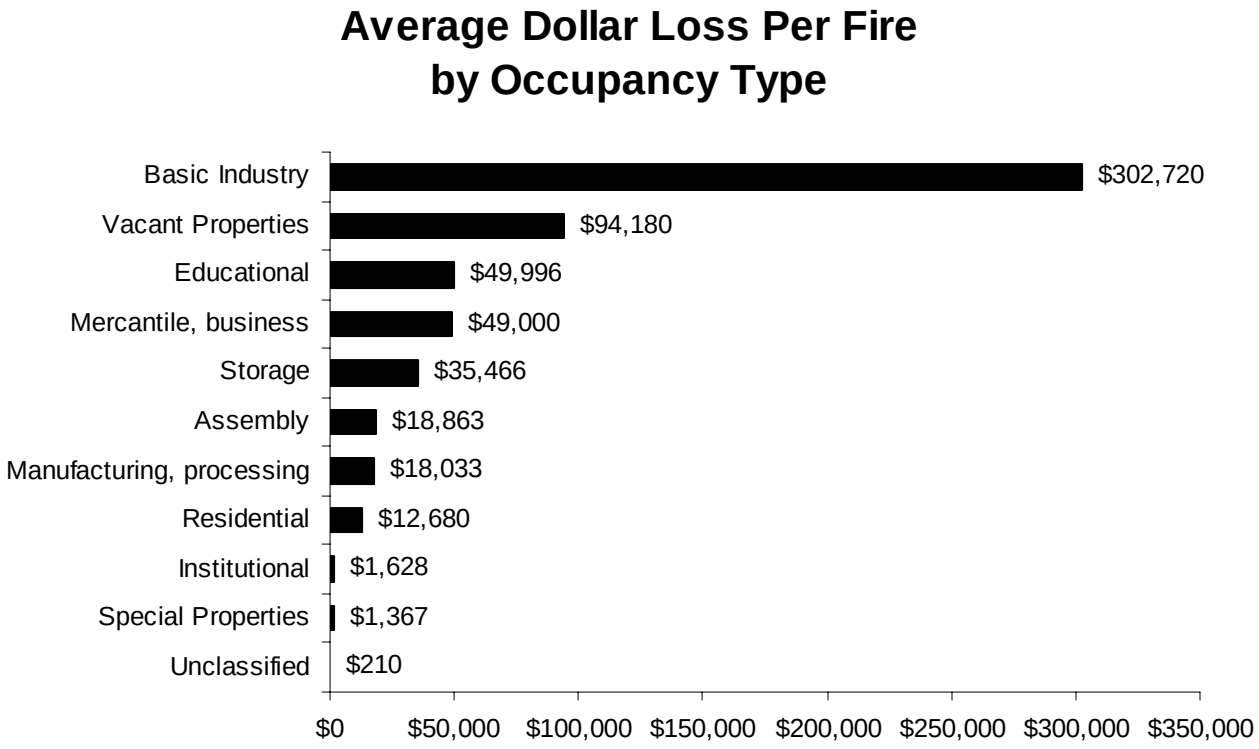
Occupancy	# of Fires	% of Total	Injuries FF	Injuries Civ	Deaths FF	Deaths Civ	Dollar Loss	Avg. Dollar Loss
Public assembly	603	4%	28	2	2	0	$11,375,166	$18,863
Educational	327	2%	3	1	0	0	16,348,711	49,996
Institutional	538	3%	1	3	0	0	876,035	1,628
Residential	**13,441**	**81%**	**454**	**313**	**1**	**40**	**170,431,176**	**12,680**
1- & 2-Family homes	*5,935*	*36%*	*239*	*175*	*0*	*21*	*86,494,375*	*14,574*
Apartments	*6,104*	*37%*	*205*	*120*	*1*	*17*	*75,777,063*	*12,414*
All other residential	*1,402*	*9%*	*10*	*18*	*0*	*2*	*8,159,738*	*27,936*
Mercantile, business	766	5%	21	5	0	2	37,533,837	49,000
Basic industry	64	0.4%	3	0	0	3	19,374,104	302,720
Manufact., processing	135	1%	24	1	0	0	2,434,461	18,033
Storage properties	235	1%	19	1	0	2	8,334,435	35,466
Special properties	409	2%	7	3	0	0	559,029	1,367
Unclassified	56	0.3%	1	0	0	0	131,687	2,352
Total	**16,574**	**100%**	**563**	**331**	**3**	**47**	**$268,046,851**	**16,133**

Occupancy Group Definitions

- **Public assembly**: This category includes amusement and recreation places such as bowling alleys, skating rinks, ballrooms, gymnasiums, arenas, stadiums, playgrounds, churches, funeral parlors, clubs, libraries, museums, courtrooms, restaurants, taverns, passenger terminals, theatres and studios.
- **Educational**: This category includes classrooms from nursery school through college, and trade and business schools. Dormitories are considered residential.
- **Institutional**: This category includes institutions that care for the aged, the young, the sick or injured, the physically restrained, the physically inconvenienced and the mentally handicapped.
- **Residential**: This occupancy group includes one- and two-family homes, apartments, rooming, boarding or lodging houses, dormitories, hotels, motels and home hotels, and residential board and care facilities. Seasonal homes are included here.
- **Mercantile, business**: Retail establishments, service stations, laundries, offices, banks, medical offices and post offices are included in this category.
- **Basic industry**: This category includes nucleonics, energy production plants, laboratories, communications facilities, defense facilities, document facilities, utility and energy distribution systems, agriculture, forests, hunting and fishing, mining, and manufacturing of mineral products such as glass, clay or cement.
- **Manufacturing, processing**: Manufacturing that is not listed under Basic Industry is listed here.
- **Storage property**: This category includes warehouses, barns, garages and tool sheds.
- **Special property**: This category includes, dumps, sanitary landfills, recycling collection points, outbuildings, bus stop shelters, phone booths, bridges, roads, railroad property, outdoor properties, water areas, aircraft areas and equipment operating areas outbuildings.

Basic Industrial Properties Have Highest Average Dollar Loss Per Fire
Basic Industrial properties had the highest dollar loss per fire of any property type. In 2007, the average dollar loss for a building fire in an industrial property was $302,720. Vacant properties[6] had the second highest dollar loss per fire than any property type. In 2007, the average dollar loss for a building fire in a vacant property was $94,180. This is more than double the 2006 average dollar loss per vacant building fire at $42,932 per fire. Vacant building fires traditionally have the highest average dollar loss per fire. A fire at a Rochester electric-generating plant caused $18 million in damages. This is the reason that basic industrial facilities & not vacant building fires caused the most average fire loss per fire.

Educational facilities had the third highest average dollar loss at $49,996. Mercantile and business properties had the next highest average dollar loss per fire at $49,000; and storage facilities were fifth at $35,466 per fire. Public assembly properties had an average dollar loss per fire of $18,863; and manufacturing and processing facilities were next at $18,033 per fire. Residential properties were eighth in average dollar loss at $12,680 per fire; institutional facilities had $1,628 per fire; and special properties had an average dollar loss of $1,367 per fire. Unclassified properties had the lowest average dollar loss at $210 per fire. A fire at a Somerville school caused $16 million in damages. This is the reason for the ten times increase in average dollar loss in school fires from 2006 to 2007.



[6] Vacant property is not an occupancy type. Any property use can be a vacant property if certain conditions are met. It is included here with the other property use categories to illustrate how dangerous and destructive fires in these types of buildings can be.

2007 Massachusetts Building Fires by Property Use

MFIRS Code	Property Use	# of Building Fires
	Assembly	**603**
100	Assembly, other	21
110	Fixed use recreation places, other	10
114	Ice rink: indoor, outdoor	1
115	Roller rink: indoor or outdoor	1
116	Swimming facility: indoor or outdoor	2
120	Variable use amusement, recreation places	6
121	Ballroom, gymnasium	4
122	Convention center, exhibition hall	2
123	Stadium, arena	4
124	Playground	38
129	Amusement center: indoor/outdoor	5
130	Places of worship, funeral parlors	2
131	Church, mosque, synagogue, temple, chapel	82
134	Funeral parlor	4
140	Clubs, other	21
141	Athletic/health club	12
142	Clubhouse	12
143	Yacht Club	2
150	Public or government, other	10
151	Library	5
152	Museum	6
155	Courthouse	4
160	Eating, drinking places	26
161	Restaurant or cafeteria	251
162	Bar or nightclub	34
170	Passenger terminal, other	1
171	Airport passenger terminal	13
173	Bus station	1
174	Rapid transit station	10
180	Studio/theater, other	3
182	Auditorium or concert hall	4
183	Movie theater	6
	Educational	**327**
200	Educational, other	30

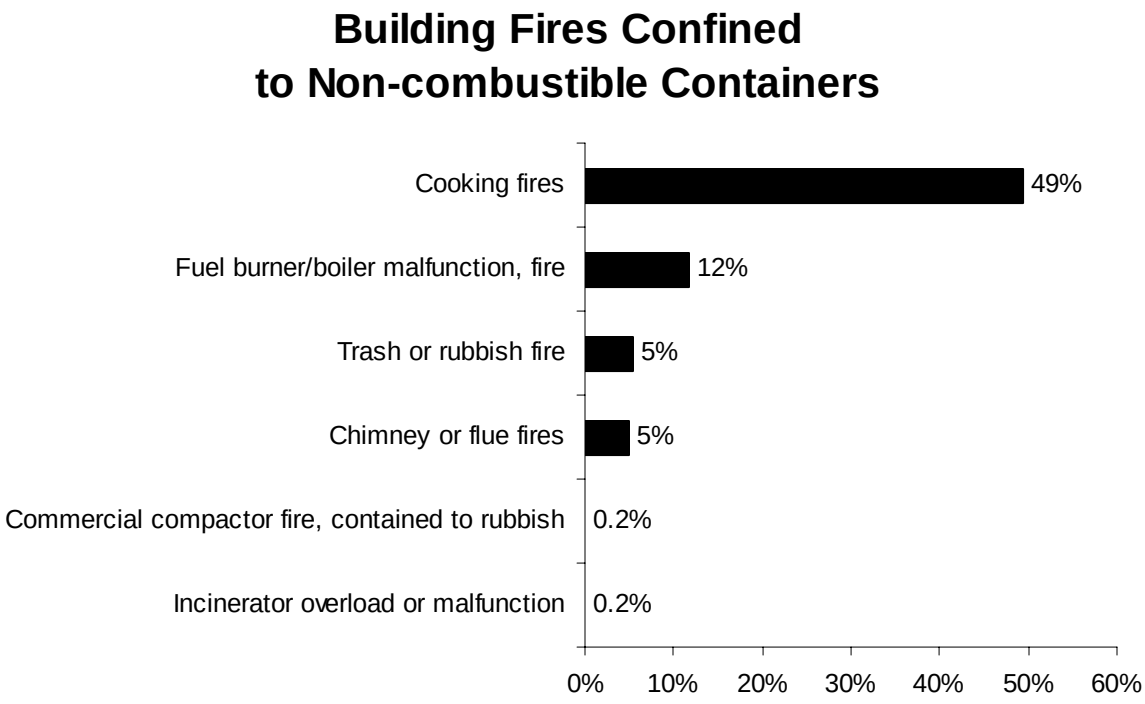
MFIRS Code	Property Use	# of Building Fires
210	Schools, non-adult	16
211	Preschool	15
213	Elementary school, including kindergarten	78
215	High school/junior high school/middle school	111
241	Adult education center, college classroom	41
254	Day care, in commercial property	26
255	Day care, in residence, licensed	10
	Health care, detention & correction	**538**
300	Health care, detention, & correction, other	26
311	24-hour care Nursing homes, 4 or more persons	181
321	Mental retardation/development disability facility	66
322	Alcohol or substance abuse recovery center	44
323	Asylum, mental institution	4
331	Hospital - medical or psychiatric	141
340	Clinics, Doctors offices, hemodialysis centers	21
341	Clinic, clinic-type infirmary	6
342	Doctor, dentist or oral surgeon's office	11
343	Hemodialysis unit	1
361	Jail, prison (not juvenile)	18
363	Reformatory, juvenile detention center	13
365	Police station	6
	Residential	**13,441**
400	Residential, other	420
419	1 or 2 family dwelling	5,935
429	Multifamily dwellings	6,104
439	Boarding/rooming house, residential hotels	300
449	Hotel/motel, commercial	133
459	Residential board and care	141
460	Dormitory type residence, other	302
462	Sorority house, fraternity house	24
464	Barracks, dormitory	82
	Mercantile, Business	**766**
500	Mercantile, business, other	137
511	Convenience store	40
519	Food and beverage sales, grocery store	123
529	Textile, wearing apparel sales	9
539	Household goods, sales, repairs	19

MFIRS Code	Property Use	# of Building Fires
549	Specialty shop	58
557	Personal service, including barber & beauty shops	17
559	Recreational, hobby, home repair sales, pet store	4
564	Laundry, dry cleaning	48
569	Professional supplies, services	13
571	Service station, gas station	24
579	Motor vehicle or boat sales, services, repair	40
580	General retail, other	29
581	Department or discount store	6
592	Bank	26
593	Office: veterinary or research	4
596	Post office or mailing firms	4
599	Business office	165
	Industrial, Utility, Defense, Agriculture, Mining	**64**
600	Utility, defense, agriculture, mining, other	7
610	Energy production plant, other	2
614	Steam or heat generating plant	1
615	Electric generating plant	8
629	Laboratory or science laboratory	14
631	Defense, military installation	1
635	Computer center	1
640	Utility or Distribution system, other	5
642	Electrical distribution	1
644	Gas distribution, pipeline, gas distribution	3
645	Flammable liquid distribution, pipeline, flammable	1
647	Water utility	1
648	Sanitation utility	5
655	Crops or orchard	3
659	Livestock production	3
669	Forest, timberland, woodland	7
679	Mine or quarry	1
700	**Manufacturing, processing**	**135**
	Storage	**235**
800	Storage, other	18
807	Outside material storage area	23
808	Outbuilding or shed	67
819	Livestock, poultry storage	3

MFIRS Code	Property Use	# of Building Fires
839	Refrigerated storage	2
880	Vehicle storage, other	17
881	Parking garage, (detached residential garage)	53
882	Parking garage, general vehicle	9
888	Fire station	6
891	Warehouse	31
898	Dock, marina, pier, wharf	4
899	Residential or self storage units	2
	Outside or special property	**409**
900	Outside or special property, other	52
919	Dump, sanitary landfill	6
921	Bridge, trestle	2
922	Tunnel	3
926	Outbuilding, protective shelter	20
931	Open land or field	40
935	Campsite with utilities	2
936	Vacant lot	23
937	Beach	4
938	Graded and cared-for plots of land	59
940	Water area, other	1
946	Lake, river, stream	2
951	Railroad right of way	3
960	Street, other	31
961	Highway or divided highway	2
962	Residential street, road or residential driveway	87
963	Street or road in commercial area	16
965	Vehicle parking area	47
981	Construction site	6
984	Industrial plant yard - area	3
	Other	**56**
000	Property Use, other	56
	Total Building Fires	**16,574**

72% of Building Fires Are Confined to Non-Combustible Containers[7]
Eleven thousand nine hundred and forty (11,940), or 72% of all building fires, were reported as confined to non-combustible containers in 2007. Eight thousand one hundred and ninety-nine (8,199) of the reported fires were cooking fires confined to a non-combustible container accounting for 49% of building fires. One thousand nine hundred and fifty-five (1,955), or 12%, were fires confined to a fuel burner or boiler malfunction. Nine hundred and nine (909), or 5%, of these fires were contained rubbish fires. Eight hundred and seventeen (817), or 5%, of all building fires reported in 2007 were fires confined to a chimney or flue. Thirty-five (35), or less than 1%, were commercial compactor fires that were confined to the rubbish. Twenty-five (25), or less than 1%, of these fires in the Commonwealth were contained to an incinerator overload or malfunction.

Confined building fires increased by 874 incidents, or 7%, from the 11,066 reported in 2006.

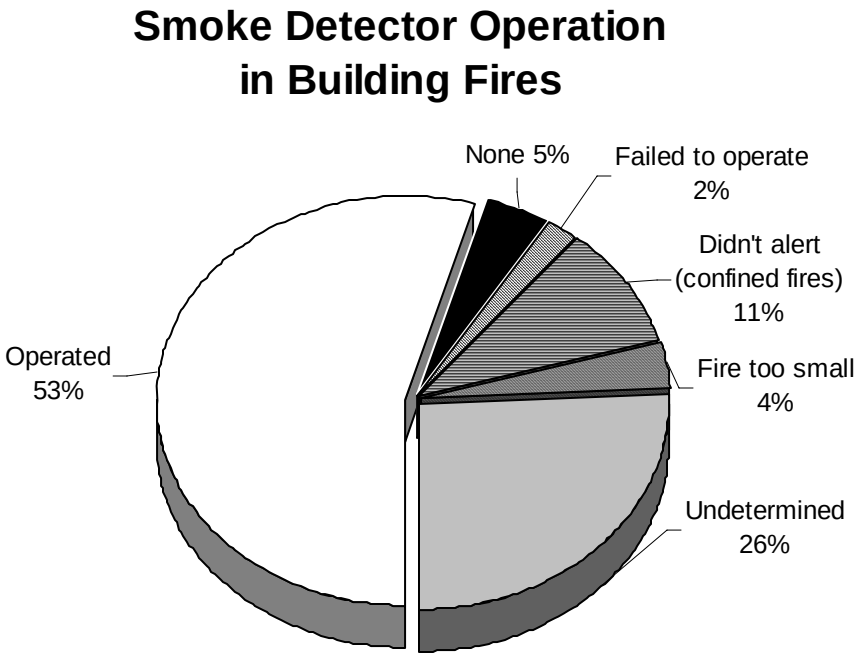


Detectors Operated in Just Over 1/2 of Building Fires
Smoke or heat detectors operated in 9,018, or 53%, of the building fires in 2007. In 11% of these fires[8], the detectors did not alert the occupants. Detectors were present but did

[7] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

[8] These represent confined fires where it was reported that the detector did not alert the occupants.

not operate in 2% of these incidents. In 5% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 4% of the residential fires. Smoke detector performance was undetermined in 3,318 incidents, or 26% of Massachusetts' 2007 building fires.



The following table shows detector performance by occupancy type for building fires.

DETECTOR PERFORMANCE

	Operated	Failed to Operate	Didn't Alert (Conf.)	Fire Too Small	None	Unknown	Total
Public assembly	291	7	54	36	50	165	603
Educational	192	2	35	22	13	63	327
Institutional	422	3	12	29	9	63	538
Residential	7,634	267	1,291	464	375	3,410	13,441
Mercantile, business	339	12	74	49	99	193	766
Basic industry	22	1	10	3	13	15	64
Manufacturing	49	2	13	11	30	30	135
Storage properties	19	2	15	3	139	57	235
Special properties	28	1	93	1	23	263	409
Unclassified	22	0	11	4	4	18	59
Total	**9,018**	**297**	**1,608**	**622**	**755**	**4,277**	**16,577**

$26 Million Fire at Uxbridge Bernat Mill is Largest Loss Building Fire

- On Saturday, July 21, 2007, at 4:14 a.m., the Uxbridge Fire Department received a master box fire alarm from the Bernat Mill Complex. Upon arrival, responding units found the sprinkler water flow alarm had been activated and smoke was found to be emanating from the lower level of the irregular shaped, three-story building that housed 56 separate businesses. It was an old New England mill that had been converted to house various types of businesses. The most probable cause of this fire was sparks from a welder's torch in one of the businesses that smoldered overnight, and a portion of the sprinkler system that covered this area of the mill had been padlocked in the closed position without notification to the fire department. This allowed the fire to quickly overwhelm the rest of the sprinkler system in the complex. Mutual aid and six statewide structural task forces brought apparatus and manpower from 78 communities from both Massachusetts and Rhode Island. Nine (9) firefighters, five from Uxbridge, were injured at this fire. The Uxbridge Fire Department was on scene for 10 days. Nine (9) firefighters were injured in this blaze, and damages were estimated to be $26 million.

Rochester Has 2nd Largest Loss Fire in 2007

- On March 31, 2007, at 7:01 p.m., the Rochester Fire Department responded to a fire in a trash burning electric generating plant. The fire was caused by an explosion of a small pressurized tank inside one of the shredders. Someone had inappropriately discarded a small propane or butane tank that should not have been put in the garbage. One firefighter severely injured his shoulder at this fire. Detectors were present but it was undetermined if they operated. Sprinklers operated but were ineffective because some of them were damaged in the explosion. Damages from this fire were estimated to be $18,000,000.

Overall, there were 22 large loss building fires reported to MFIRS in 2007 with a total combined dollar loss of $105.6 million representing 39% of all the estimated dollar loss of Massachusetts' building fires in 2007.

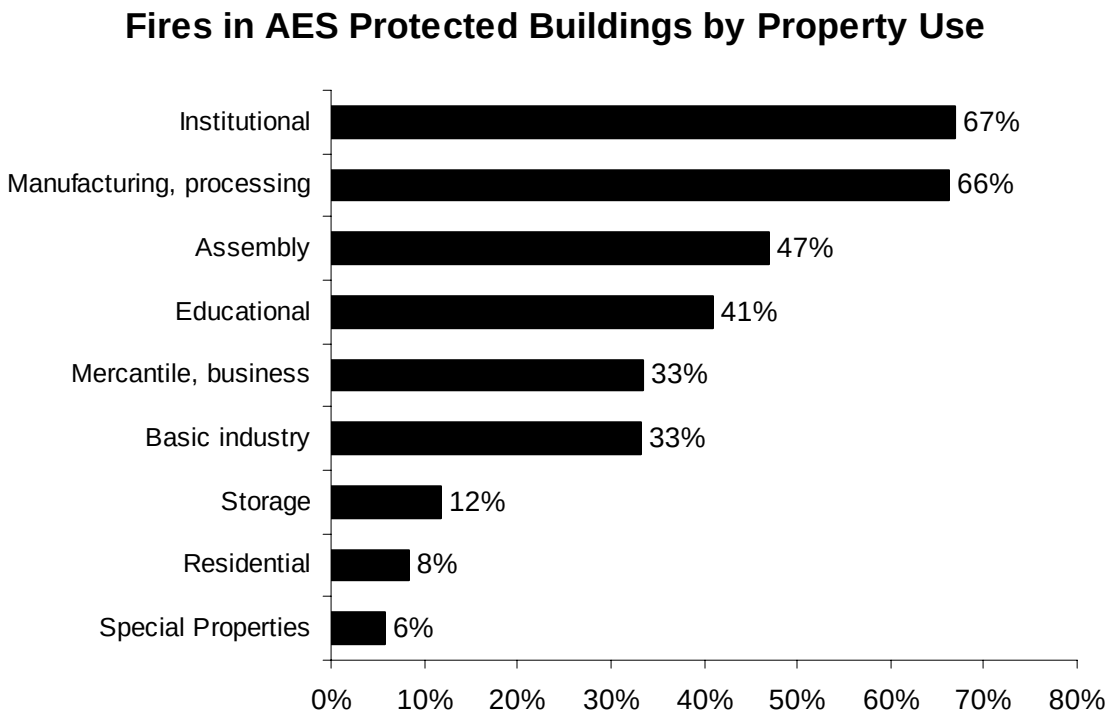
15% of Unconfined Fires Occurred in Buildings with AES

Overall, 702, or 15%, of the 4,626 unconfined[9] building fires in 2007 occurred in buildings that had automatic extinguishing systems (AES), regardless of whether the fire was large enough to activate the system.

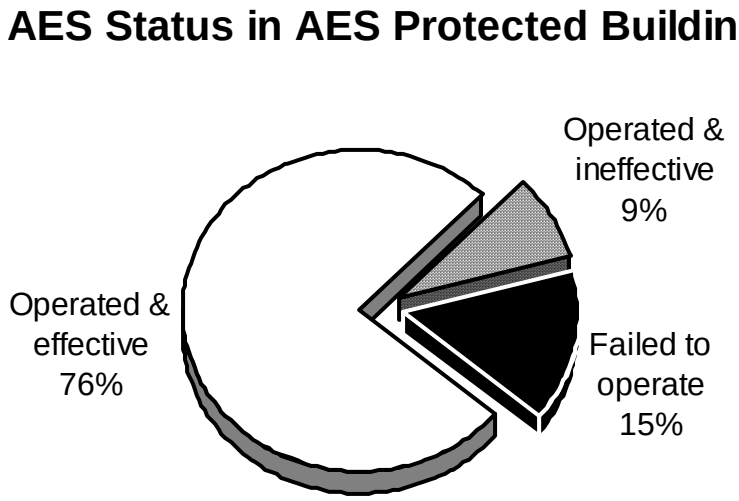
The following chart lists the percentage of unconfined fires in buildings that were at least partially protected by an AES for that specific property use. Institutional properties and manufacturing and processing facilities were the most likely to have an AES. Sixty-seven percent (67%) of the fires in health care, detention and correctional facilities; 66% of the fires in manufacturing or processing facilities, 47% of the fires in public assembly

[9] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) also does not have to have a Structure Fire Module completed. Therefore the fields concerned with detector and sprinkler presence and performance would not be completed. These incidents are not included in the analysis of these fields.

facilities, and 41% of the fires in educational properties occurred in buildings with these systems. Only 8% of the residential fires occurred in buildings protected by an automatic extinguishing system.



AES Work in Over 3/4 of Building Fires When Installed & Maintained
AES were present and operated in 156, or 84%, of the 184 building fires in buildings protected by an automatic extinguishing system, which had a reported fire large enough for the AES to activate in Massachusetts in 2007. Of these 184 fires, the systems were



effective in 136, or 76%, and ineffective in 16, or 9%, of these incidents. AES were present but failed to operate in 26, or 15%, of these 184 building fires. Some of the reasons for the automatic extinguishing system failures were reported to be: the fire was not in an area protected by the system, and the system was shut off; and manual intervention defeated the system.

The table below shows sprinkler performance by occupancy group for those incidents where AES presence and performance were reported.

AUTOMATIC EXTINGUISHING SYSTEM PERFORMANCE

	Operated	Did Not Operate	Fire Too Small	None	Unknown	Total
Assembly	13	7	39	18	2	83
Educational	3	0	22	9	0	34
Institutional	6	0	49	20	2	77
Residential	75	10	135	66	6	292
Mercantile, business	22	10	60	20	1	107
Basic industry	4	1	4	3	0	12
Manufacturing	19	4	28	10	2	63
Storage properties	9	0	10	1	2	22
Special properties	1	0	1	1	0	3
Unclassified	0	0	0	0	0	0
Total	**152**	**26**	**348**	**148**	**19**	**693**

High Rise Buildings Must be Fully Equipped with Sprinklers

Evacuating a high-rise building while fighting a raging fire is a logistical nightmare for firefighters. Automatic sprinklers make these buildings much safer for residents, office workers, visitors and firefighters. Under the provision of MGL Chapter 148, Section 26A 1/2, all existing buildings of more than 70 feet in height above the mean grade had to be retrofitted by a fully protected adequate system of automatic sprinklers by March 30, 1998. This took effect in 1988. All new high rises are required to have automatic sprinklers.

Written Permit Required from Fire Department before Disconnecting Sprinklers

Under the provisions of MGL Chapter 148, Section 27A, it is illegal to "…shut off, disconnect, obstruct, remove or destroy… any part of any sprinkler system, water main, hydrant, or other device used for fire protection… without first procuring a written permit from the head of the fire department." The head of the fire department is authorized to issue conditions necessary to provide protection from fire and the preservation of public safety. In the event of an emergency, the system may be shut down as long as the fire department head is immediately notified of the action and when the system is back in service. Violators may be punished by imprisonment for not more than one year and/or a fine of not more than $1,000.

Residential Building Fires

81% of Building Fires Occurred in Residential Occupancies
Massachusetts fire departments reported that 13,441, or 81% of the 16,574 building fires occurred in residential occupancies. These fires caused 40 civilian deaths, one fire service deaths, 313 civilian injuries, 454 fire service injuries and an estimated dollar loss of $170.4 million. The average dollar loss per fire was $12,680. The total number of reported residential building fires went up 7% from the 12,596 reported in 2006. The following table shows the statistics for fires, firefighter and civilian casualties and the estimated dollar loss by residential occupancy.

RESIDENTIAL BUILDING FIRES

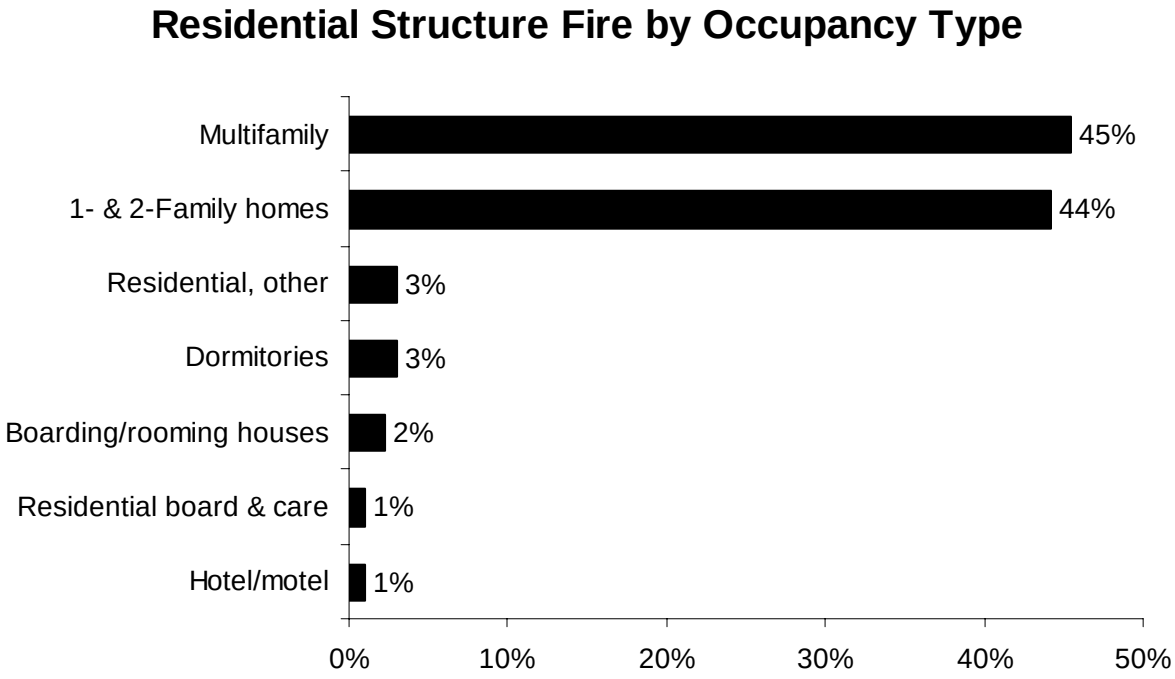
	# of	% of	Injuries		Deaths		Dollar
Occupancy	**Fires**	**Total**	**FF**	**Civ**	**FF**	**Civ**	**Loss**
1- & 2-Family homes	5,935	44%	239	175	0	21	$86,494,375
Multifamily	6,104	45%	205	120	0	17	75,777,063
Rooming houses	300	2%	3	5	1	1	928,522
Hotels & motels	133	1%	1	4	0	0	1,302,016
Residential board & care	141	1%	0	0	0	1	189,971
Dormitories	408	3%	1	0	0	0	561,595
Unclassified	420	3%	5	9	0	0	5,177,634
Total	**13,441**	**100%**	**454**	**313**	**1**	**40**	**$170,431,176**

Residential Occupancy Sub-Group Definitions

- **1- & 2-Family**: This category includes one or two family homes, detached, manufactured homes, mobile homes and duplexes.
- **Multifamily dwellings**: This category includes apartments, condominiums, townhouses, rowhouses and tenements.
- **Boarding, rooming house**: This category includes residential hotels and shelters.
- **Hotel, motel**: This occupancy group includes commercial hotels, motels or inns.
- **Residential board and care**: This category includes long-term care and half-way houses. Excluded are nursing facilities (Property Use code = 311).

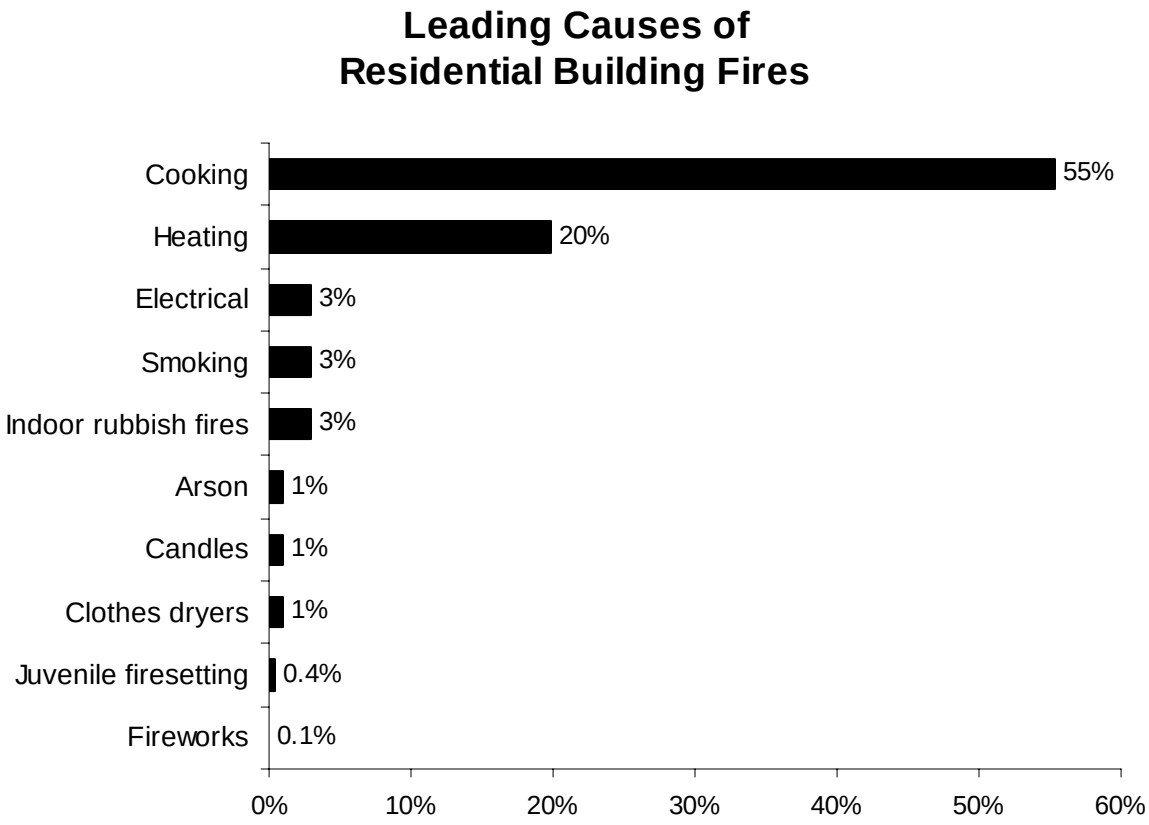
- **Dormitories**: This category includes dormitory type residences and sorority or fraternity houses. It also includes nurses' quarters, military barracks, monastery/convents, dormitories, bunk houses and workers' barracks.
- **Residential, other**: Any type of residential occupancy that is not defined above.

45% of All Residential Building Fires in 2007 Occurred in Apartments
In 2007 multifamily housing had the most fires of any residential type of dwelling. Forty-five percent (45%) of all residential fires in 2007 occurred in apartment buildings. Forty-four percent (44%) happened in one-or two-family homes; 3% occurred in dormitory style buildings; 2% happened in rooming houses; and 1% each occurred in residential board and care facilities and hotels or motels. Another 3% of residential fires in Massachusetts occurred in unclassified residential occupancies.



Cooking Causes Over 1/2 of Residential Building Fires
The leading causes of residential building fires in 2007 were cooking, heating, electrical, smoking, indoor rubbish fires, arson, candles, clothes dryers, juvenile firesetting, and fireworks. Cooking was the leading cause of residential building fires accounting for 7,448, or 55%, or more than half of the 13,441 incidents. Heating equipment accounted for 2,671, or 20% of the total fires. Electrical problems caused 468, or 3%, of incidents. The unsafe use and disposal of smoking materials also accounted for 456, or 3%, of these incidents. Indoor rubbish fires were the cause of 349, or 3%, of residential building

fires[10]. Arson accounted for 194, or 1%, of residential building fires. One percent (1%), or 127, were caused by candles. Clothes dryers were the cause for 97, or 1%, of these incidents. Juvenile firesetting accounted for 55, or less than 1%, of residential building fires. Fireworks caused seven, or less than 1%, of these fires in Massachusetts in 2007.



58% of Residential Fires Started in the Kitchen
Fifty-eight percent (58%), of the residential building fires in 2007 started in the kitchen. Thirteen percent (13%) began in a heating room or area; 6% started in the chimney or flue; 3% began in the bedroom; and 2% started in the living room in Massachusetts residential building fires in 2007.

74% of Residential Building Fires Confined to Non-Combustible Containers[11]
Nine thousand eight hundred and ninety-five (9,895), or 74% of all residential building fires, were reported as confined to non-combustible containers in 2007. Seven thousand

[10] It's possible that many of these fires are also smoking fires, but we do not have further causal information

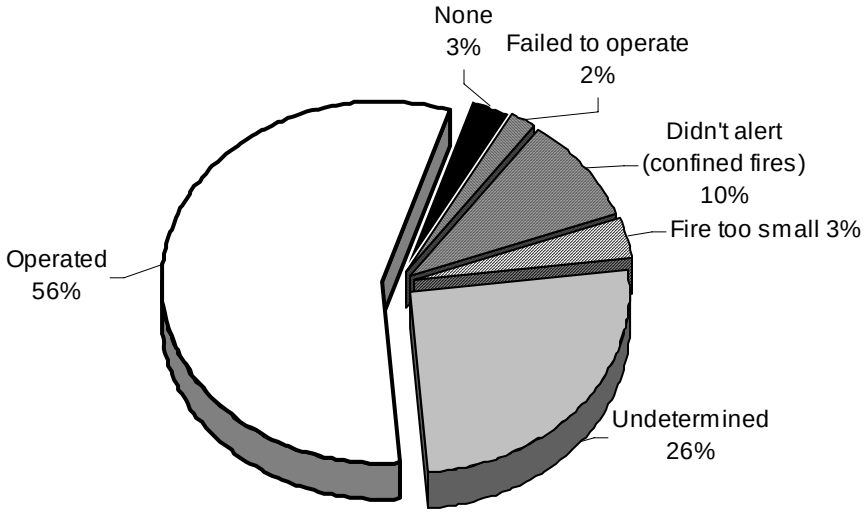
[11] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

and seventeen (7,017) of the reported fires were cooking fires contained to a non-combustible container accounting for 52% of residential building fires. One thousand seven hundred and four (1,704), or 13%, were fires confined to a fuel burner or boiler malfunction. Seven hundred and eighty-seven (787), or 6%, of all residential building fires reported in 2007 were fires confined to a chimney or flue. Three hundred and sixty-two (362), or 3%, of these fires were contained rubbish fires. Nineteen (19), or less than 1%, of these fires in the Commonwealth were contained to an incinerator overload or malfunction. Six (6), or less than 1%, of the residential building fires in 2007 were commercial compactor fires confined to the rubbish inside the compactor.

The number of contained fires in residential occupancies rose in 2007. Confined fires increased by 963 incidents, or 8%, from the 9,202 reported in 2006.

Detectors Operated in Over 1/2 of Fires
Smoke or heat detectors operated in 7,638, or 56%, of the residential building fires in 2007. In 10% of these fires[12], the detectors did not alert the occupants. Detectors were present but did not operate in 2% of these incidents. In 3% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 3% of the residential fires. Smoke detector performance was undetermined in 3,460 incidents, or 26% of Massachusetts' 2007 residential building fires.

Smoke Detector Status in Residential Fires



Houses Must Have Detectors at Time of Sale
Under the provisions of Massachusetts General Law Chapter 148, Section 26F, all buildings containing one to five dwelling units built prior to 1975, must be equipped by

[12] These represent confined fires where it was reported that the detector did not alert the occupants.

the seller with approved smoke detectors upon the sale or transfer of the building as provided in Section 26E. This statute took effect on January 1, 1982. Many homes changed hands during past real estate booms and while many owners had not installed detectors to protect themselves, they did install these devices to sell their home. The new owners are then protected by an early warning system but it is our concern that many have not been fully maintained since then. The new owners should maintain the detectors by testing the detectors monthly and replacing the batteries twice a year. Detectors should be kept free of dust and never painted over.

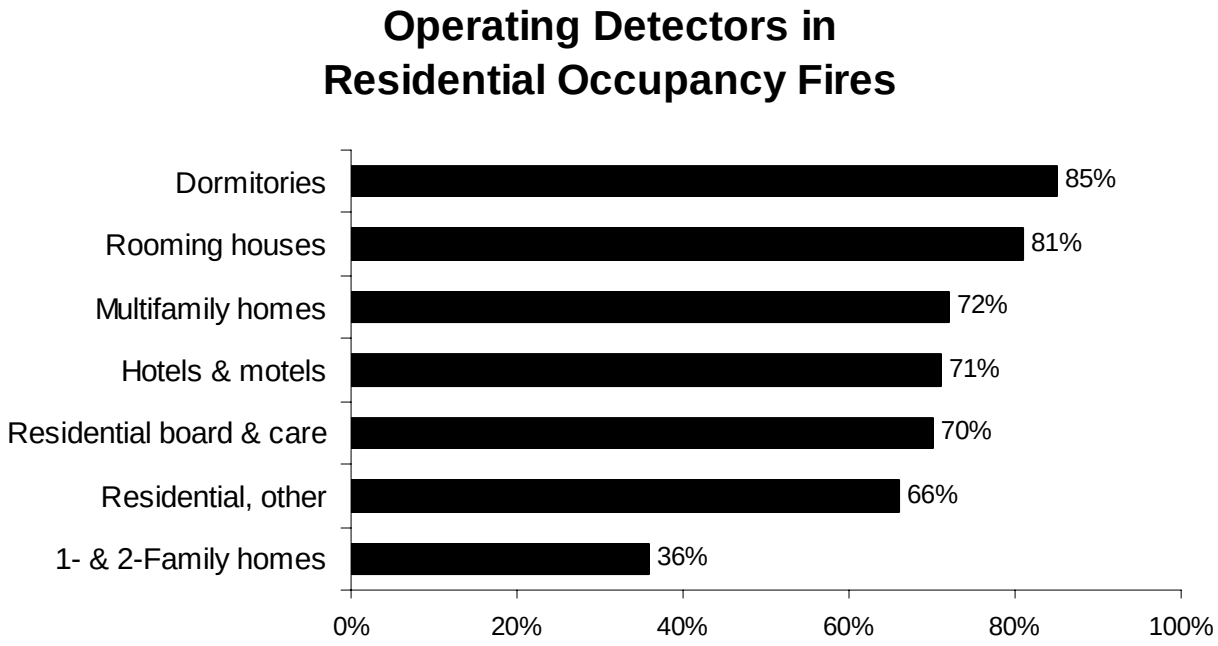
Smoke Alarms That Are 10 Years Old or Older Should Be Replaced
Studies have indicated that not unlike any other appliance in your household, smoke detectors do not last forever. The recommended life span for a typical smoke detector whether it is battery-powered or hard-wired is 10 years. Smoke alarms that are 10 years old or older should be replaced. The manufacture date is stamped or marked on the back of the detector. If there is no date, the detector should be replaced because it is already more than 10 years old.

Automatic smoke detectors are required at all times in all residential buildings. Now mandatory through Nicole's Law, Massachusetts General Law Chapter 148, Section 26E (a) requires owners of one- and two-family homes built before 1975 to install smoke detectors outside each separate sleeping area and on the ceiling of each stairway leading to a floor above. All homes built after 1975 are required to have smoke alarms. At this time, there is not a home left in Massachusetts that is not required to have smoke alarms.

New Homes Must Have Detector in Bedroom Area
At a minimum, smoke detectors should be installed on every floor of the home and at the bottom of the basement stairwell. The sixth edition of the Massachusetts Building Code requires smoke detectors within the bedroom area in all *new* residential occupancies. When a bedroom door is shut, it can help prevent the spread of fire from room to room. Unfortunately, a shut door also makes it harder to hear a smoke detector sounding in the hallway. People who sleep with their bedroom door closed should install a detector inside their bedroom. After detectors are installed, they need to be regularly tested and maintained. All the detector can do is sound the alarm. Everyone needs to develop and practice the escape routes they would use in the event of a fire.

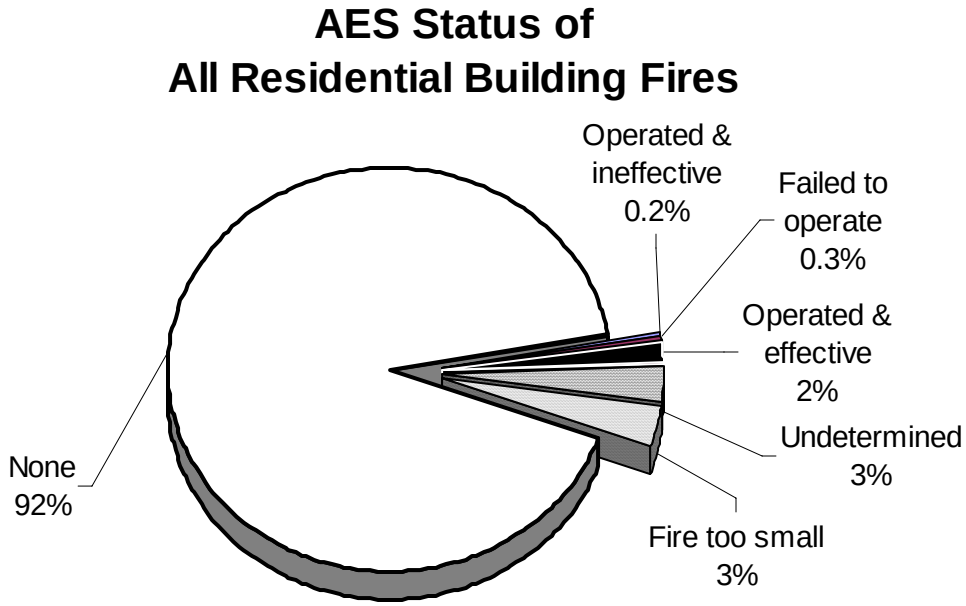
Over 1/4 of Failed Detectors Had Missing or Disconnected Batteries
Of the 267 fires where smoke detectors were present but failed to operate, 73, or 27%, failed because the batteries were either missing or disconnected. Thirty-six (36), or 13%, failed because of a power failure, shutoff or disconnect. Twenty-eight (28), or 10%, did not operate because of dead batteries. Eleven (11) detectors, or 4%, failed from a lack of maintenance such as not cleaning dust from the detector or painting over the detector. Four (4) units, or 1%, failed because they were defective. One (1), or less than 1% failed from improper installation or placement. For 114 cases, or 43%, the reason the detector failed was not determined.

1- & 2-Families Had Lowest Percentage of Operating Detectors
Dormitories were the most likely residential occupancy to have operating smoke detectors in 2007. Rooming houses were the second most likely residence to have working smoke detectors. Multifamily properties were the next most likely residential occupancy to have operating smoke detectors while one- and two-family homes were the least likely. The following chart shows the percentage of operating smoke detectors in fires in residential occupancies.



No Working Detectors for 38% of Residential Fire Victims
Of the forty (40) people who died in residential building fires in 2007, the smoke detector performance was known for 25 of the victims. Victims were not alerted by smoke detectors in 11 fires that killed 15 people, or 38% of the victims. In six of these incidents, no detectors were present at all, killing eight, or 20%, of these individuals. Detectors were present, but did not operate in five fires that killed seven people, or 18% of fatal residential fire victims. Detector performance was undetermined in eight residential building fires that killed 10 people accounting for 25% of the residential building fire deaths in 2007.

AES Present in Only 6% of Residential Building Fires
Automatic extinguishing systems (AES) were reported present and operated effectively in 68, or 2% of the 3,888 residential building fires where system performance was reported in 2007. AES were present and operated ineffectively in seven, or 0.2%, of these fires. In 10, or 0.3%, of the fires in residential occupancies, the system did not operate. In 135, or 3%, the fire was too small to activate the system. In 3,562, or 92%, of the cases, there were no systems present or installed. AES performance was not classified in 106, or 3%, of the incidents involving residential building fires.



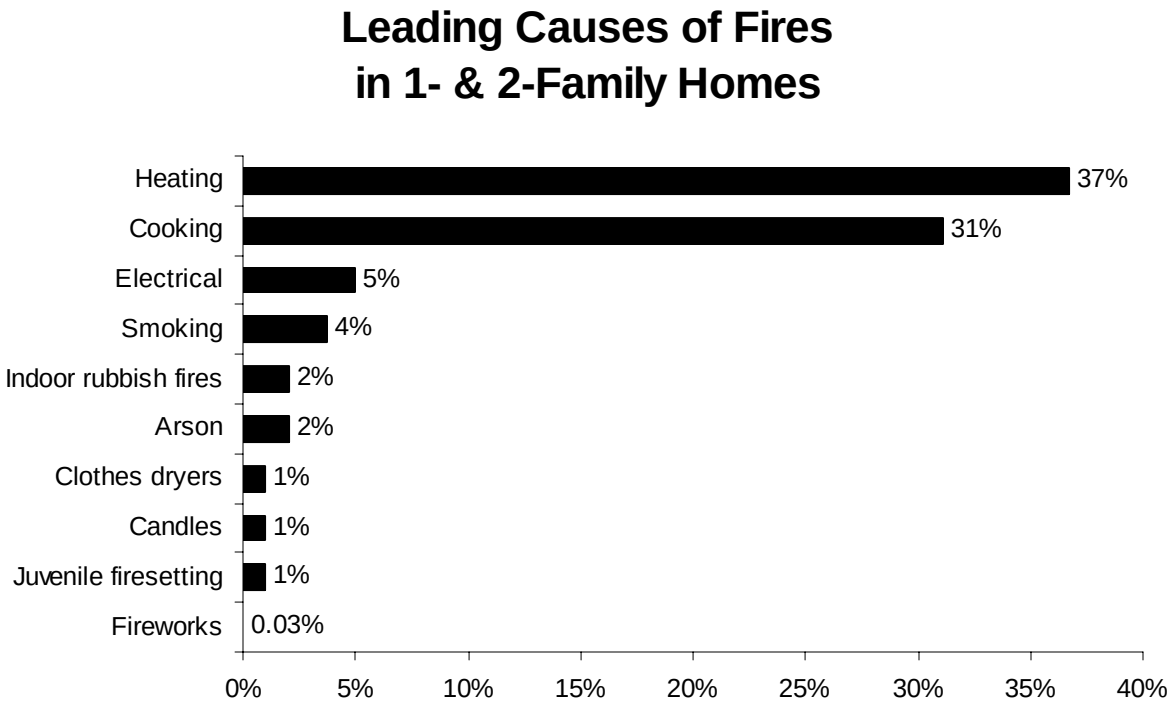
Only You Can Make Your Home Safer for You and Your Family
Eighty-one percent (81%) of building fires and 66% of fire deaths in 2007 took place in residential occupancies. Efforts to reduce the incidence of fire and fire deaths must be focused on home fire safety to have the greatest impact. Increased maintenance of smoke alarms, installation of residential sprinklers, practice of home escape plans coupled with safer products such as self-extinguishing cigarettes, upholstered furniture that meets the California flammability standard, and flame resistant sleepwear for all ages can help make homes and the families who live in them safer from fire.

Fires in One- and Two-Family Homes

5,935 Fires, 11 Civilian Deaths, $70 Million in Damage
Five thousand nine hundred and thirty-five (5,935) building fires in one- and two-family homes caused 21 civilian deaths, 175 civilian injuries, 239 fire service injuries, and an estimated $86.5 million in property damage. In 2007, 44% of the Commonwealth's 13,441 residential building fires occurred in one- and two-family homes. The average dollar loss from these types of fires was $14,574. Fires in one- and two-family homes were up 4% from 5,707 in 2006.

Heating Was the Leading Cause of Fires in 1- & 2-Family Homes
Heating equipment caused 37% of incidents occurring in one- and two-family homes. The next leading cause of fires in one- and two-family homes was cooking, accounting

for 31%. Five percent (5%) of one- and two-family residential building fires were caused by electrical problems. The unsafe and improper use of smoking materials caused 4% of these fires. Indoor rubbish fires and arson fires both caused 2% of these fires. Clothes dryers, candles and juvenile-set fires each caused 1%, and fireworks accounted for less than 1% of the fires in one- and two-family homes in 2007.



Overall, cooking is the leading cause of fires. It is also the leading cause of fires in every other residential occupancy except one- and two-family homes. The leading cause of fires for the past eight years in one- and two-family homes has been heating equipment and cooking has been the second leading cause except in 2003 when they were tied. A reason for this difference is that multifamily dwellings tend to be more regulated by building and fire codes than one- and two-family homes. Most apartments are rental properties, that fall under more stringent fire prevention statutes.

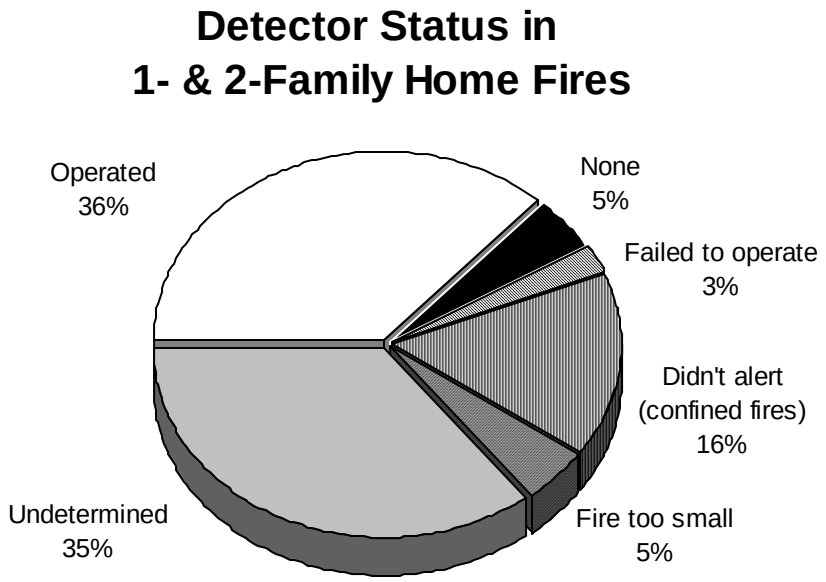
Over 1/3 of Fires in 1- & 2- Family Homes Started in the Kitchen

For fires in one- and two-family homes where area of origin is known, 34% started in the kitchen. The second leading area of origin was heating equipment rooms or areas, accounting for 23% of these fires. Thirteen percent (13%) of these fires started in the chimney or flue; 4% started in the bedroom. The living room, wall assembly, laundry rooms, substructure areas, and exterior wall surfaces each accounted for 2% of these incidents.

65% of 1- & 2-Family Fires Were Confined to Non-Combustible Containers[13]
Three thousand eight hundred and eighty (3,880), or 65%, of all residential building fires in one- and two-family homes, were reported as confined to non-combustible containers in 2007. One thousand six hundred and sixty-five (1,665) were cooking fires confined to a non-combustible container accounting for 28% of all the residential building fires in one- and two-family homes. One thousand three hundred and six (1,306), or 22%, were fires confined to a fuel burner or boiler. Seven hundred and forty-three (743), or 13%, of all one- and two-family fires reported in 2007 were fires confined to a chimney or flue. One hundred and fifty-six (156), or 3%, of these fires were contained rubbish fires. Nine (9), or less than 1%, of the one- and two-family building fires were contained to an incinerator overload or malfunction in 2007; and one fire, or less than 1%, was confined to a commercial compactor.

The number of contained fires dropped in 2007. Confined fires in one- and two-family homes increased by 148 incidents, or 44, from the 3,732 reported in 2006.

Detectors Alerted Occupants in Over 1/3 of Fires
Detectors alerted occupants in over one-third of one- and two-family residential fires. Smoke or heat detectors operated and alerted the occupants in 2,170, or 36%, of the one- and two-family home fires in 2007. In 16% of these fires[14], the detectors did not alert the



[13] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

occupants. Detectors were present but did not operate in 3% of these incidents. In 5% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 5% of these residential fires. Smoke detector performance was undetermined in 2,114 incidents, or 36% of Massachusetts' 2007 one- and two-family fires.

Almost 1/3 of Failed Detectors Had Missing or Disconnected Batteries
Of the 155 fires where smoke detectors were present but failed to operate, 50, or 32%, failed because the batteries were either missing or disconnected. Nineteen (19), or 12%, did not operate because of dead batteries. Sixteen (16), or 10%, failed because of a power failure, shutoff or disconnect. Six detectors, or 4%, failed from a lack of maintenance. Two (2) units, or 1%, failed because they were defective. One (1), or 1%, failed from improper installation or placement. For 61 cases, or 39%, the reason the detector failed was not determined.

Detectors Required in All One- and Two-Family Homes
Originally adopted as a local ordinance, and now mandatory through Nicole's Law, Massachusetts General Law Chapter 148, Section 26E (a) requires owners of existing one- and two-family homes built before 1975 to install smoke detectors outside each separate sleeping area and on the ceiling of each stairway leading to a floor above. Section 26F requires the seller of existing one- and two- family homes to equip the building with approved smoke detectors as provided in section 26E. The state building code requires all one- and two-family homes constructed after 1975 to have hardwired, interconnected smoke detectors outside each separate sleeping area and on the ceiling of each stairway leading to a floor above. In 1997 this was amended by requiring all newly constructed one- and two-family homes and any additions that included a bedroom to include requiring installing smoke detectors in all bedrooms per the Commonwealth's Building Code - 780 CMR 3603.16.10.

No AES Present in 99% of One- and Two-Family Building Fires
In 2007, in three, or less than 1%, of these incidents an automatic extinguishing system (AES) was present and operated effectively. In two, or less than 1% of the incidents, the fire was too small to activate the system. In 99% of the cases where AES status was known, there were no systems.

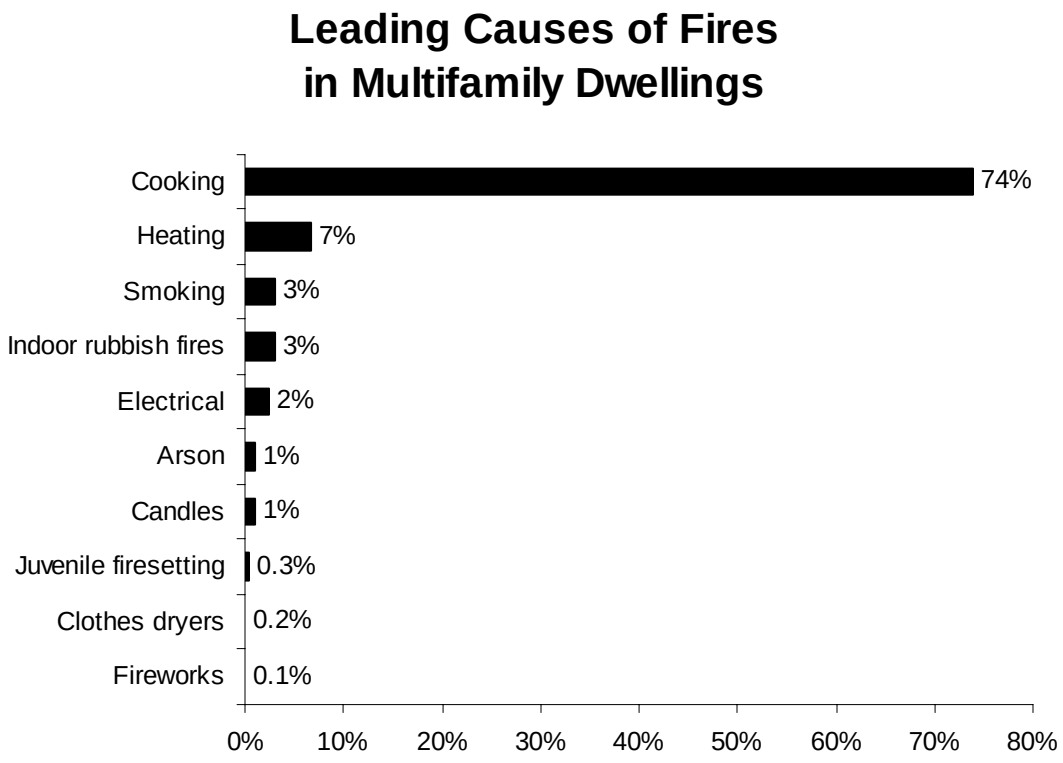
Multifamily Home Fires

6,104 Fires, 17 Civilian Deaths, 1 Fire Service Death & $75.8 Million in Damage
Six thousand one hundred and four (6,104), or 45%, of the Commonwealth's 13,441 residential building fires occurred in multifamily dwellings in 2007. These 6,104 fires caused 17 civilian deaths, one fire service death, 120 civilian injuries, 205 fire service injuries, and an estimated dollar loss of $77.8 million. The average dollar loss per fire was $12,414. Fires in apartments were up 10% from 5,554 in 2006.

[14] These represent confined fires where it was reported that the detector did not alert the occupants.

This residential occupancy category includes apartments, condominiums, townhouses, rowhouses and tenements.

Unsafe Cooking Caused Almost 3/4 of Apartment Fires
Seventy-four percent (74%) of the fires in apartments were caused by unsafe cooking in 2007. Heating accounted for 7% of apartment fires. Smoking and indoor rubbish fires were each responsible for 3% of these fires. Electrical problems accounted for 2% of apartment fires. Arsons and candles each caused 1% of the fires in these dwellings. Juvenile-set fires, clothes dryers, and fireworks each caused less than 1% of the fires in multifamily homes in 2007.

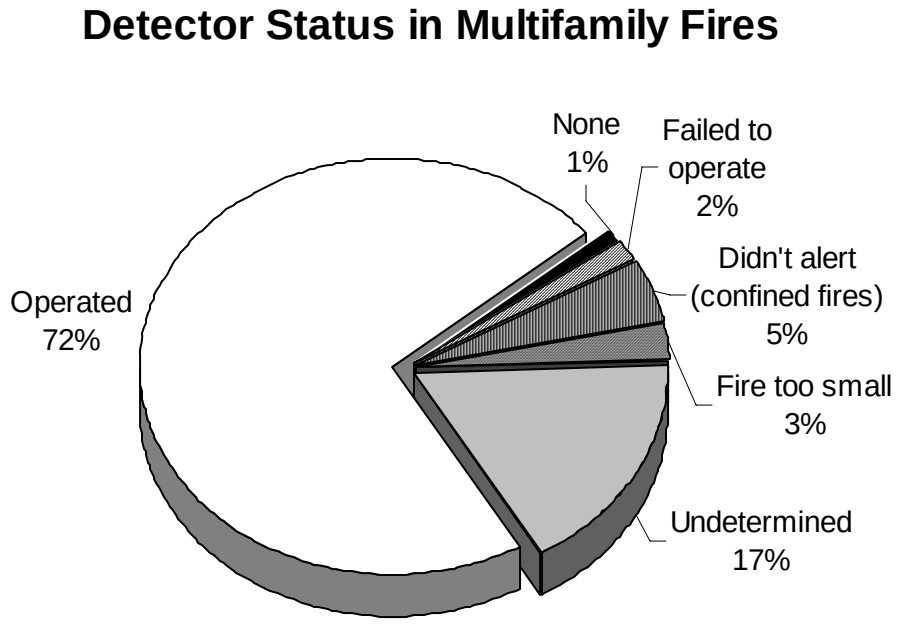


Over 3/4 of Apartment Fires Started in the Kitchen
For apartment fires where area of origin is known, 77% started in the kitchen. Six percent (6%) began in the heating room or area; 3% started in the bedroom; and 1% each started in living rooms, exterior balconies, and in bathrooms.

79% of Multifamily Home Fires Confined to Non-Combustible Containers[15]
Four thousand eight hundred and twenty (4,820), or 79% of all building fires in multifamily homes, were reported as confined to non-combustible containers in 2007. Four thousand two hundred and eighty-five (4,285) were cooking fires contained to a non-combustible container accounting for 70% of all the multifamily dwelling fires in 2007. Three hundred and forty-four (344), or 6%, were fires confined to a fuel burner or boiler malfunction. One hundred and fifty-five (155), or 3%, of these fires were contained rubbish fires. Twenty-two (22), or less than 1%, of apartment fires reported in 2007 were fires confined to a chimney or flue. Ten (10), or less than 1%, were commercial compactor fires confined to the garbage; and four incinerator overloads or malfunctions contributed less than 1% to the multifamily home fires in 2007.

Confined fires in apartments increased by 468 incidents, or 11%, from the 4,352 reported in 2006.

Detectors Alerted Occupants in Almost 3/4 of Fires
Smoke or heat detectors operated and alerted the occupants in 4,400, or nearly three-quarters (72%), of the multifamily fires in 2007. In 5% of these fires[16], the detectors did not alert the occupants. Detectors were present but did not operate in 2% of these incidents. In 1% of these fires, no detectors were present at all. The fire was too small to



[15] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.
[16] These represent confined fires where it was reported that the detector did not alert the occupants.

trigger the detector in 3% of these residential fires. Smoke detector performance was undetermined in 1,050 incidents, or 17% of Massachusetts' 2007 multifamily fires.

Almost 1/4 of Non-Working Detectors Failed Due to Missing Batteries
Of the 102 fires where smoke detectors were present but failed to operate, 22, or 22%, failed because the batteries were either missing or disconnected. Nineteen (19), or 19%, failed because of a power failure, shutoff or disconnect. Eight (8), or 8%, did not operate because of dead batteries. Five (5), or 4%, didn't operate because of a lack of maintenance. Two (2) units, or 2% failed because they were defective. For 46 cases, or 45%, the reason the detector failed was not classified or undetermined.

Apartments with 3+ Units Must Have Smoke Detectors
According to Massachusetts General Law Chapter 148, Section 26C, apartment houses containing six or more units must be equipped with hard-wired smoke detectors. In buildings of three to five dwelling units, the detectors may be hard-wired or battery operated inside the units themselves. Detectors in common hallways and basements must be hard-wired.

AES Present in Only 10% of Multifamily Dwelling Fires
Automatic extinguishing systems (AES) were present and operated effectively in 49, or 4% of the 1,355 multifamily dwelling fires where system status was known in 2007. In six incidents, or less than 1%, the system operated but was ineffective in suppressing the fire. In four of the fires, less than 1%, the AES did not operate. In 82, or 6%, of these incidents, the fire was too small to activate the system. In 1,214, or 90%, of the cases, there were no systems present or installed. In 92 incidents, AES status was unknown. These fires were excluded from the percentage calculations.

Apartments More Likely to Have Sprinklers Installed
Apartments are more likely than single-family dwellings to have sprinklers installed. Newly constructed apartments with three or more units are required by building codes to have them installed. Also, apartments are likely to be found in high-rise buildings that were required to be retrofitted with sprinklers by March 1998. Sprinklers were present in 10% of multifamily fires, but in less than 1% of fires in one- and two-family dwellings.

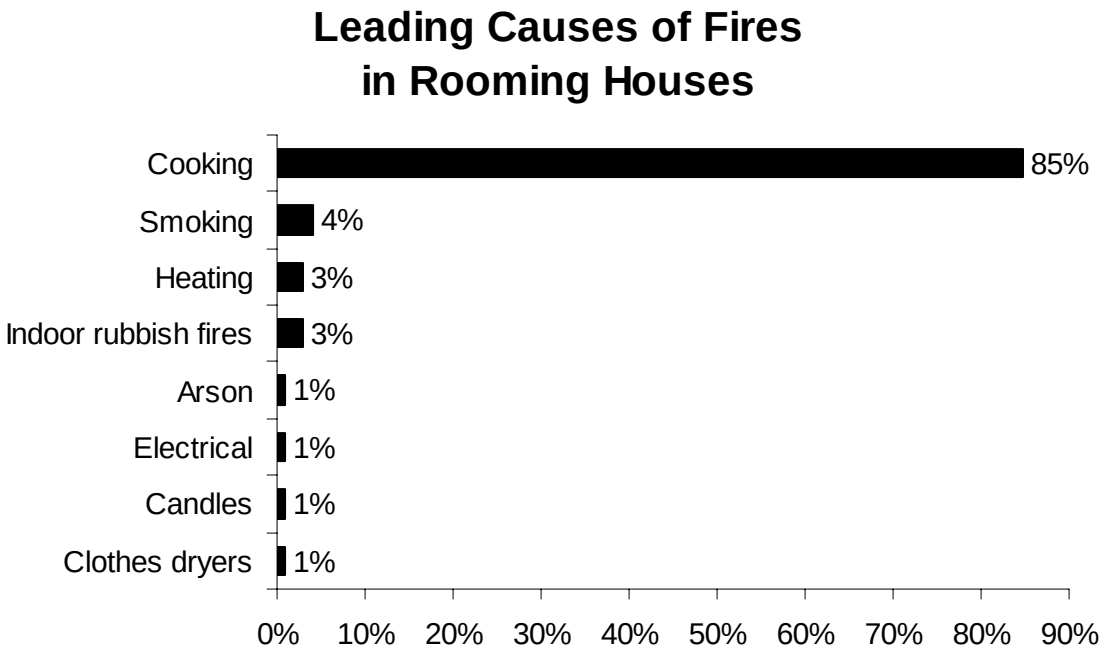
In 1997, the State Building Code required all newly built or substantially renovated buildings with three or more apartments with common egresses to be sprinklered.

Rooming House Fires

300 Fires, 1 Civilian Death, 5 Civilian Injuries, 3 Fire Service Injuries
Three hundred (300) rooming, lodging, and boarding house fires were reported to the Massachusetts Fire Incident Reporting System (MFIRS) in 2007. These 300 fires caused one civilian death, five civilian injuries, three firefighter injuries and an estimated $928,522 in damages. The average dollar loss per fire was $3,095. Two percent (2%) of

the 13,441 residential building fires in 2007 occurred in rooming, boarding, or lodging houses. Fires in rooming houses were up 18% from 254 in 2006.

Cooking Caused 85% of Rooming House Fires
Of the 300 incidents in rooming houses, cooking caused 85% of these fires. The unsafe use and disposal of smoking materials was the next significant cause, igniting 4%, of the rooming house fires. Heating equipment and indoor rubbish fires each accounted for 3% of these fires. Arsons, electrical problems, candles and clothes dryers each caused 1% of the fires in rooming houses in 2007.

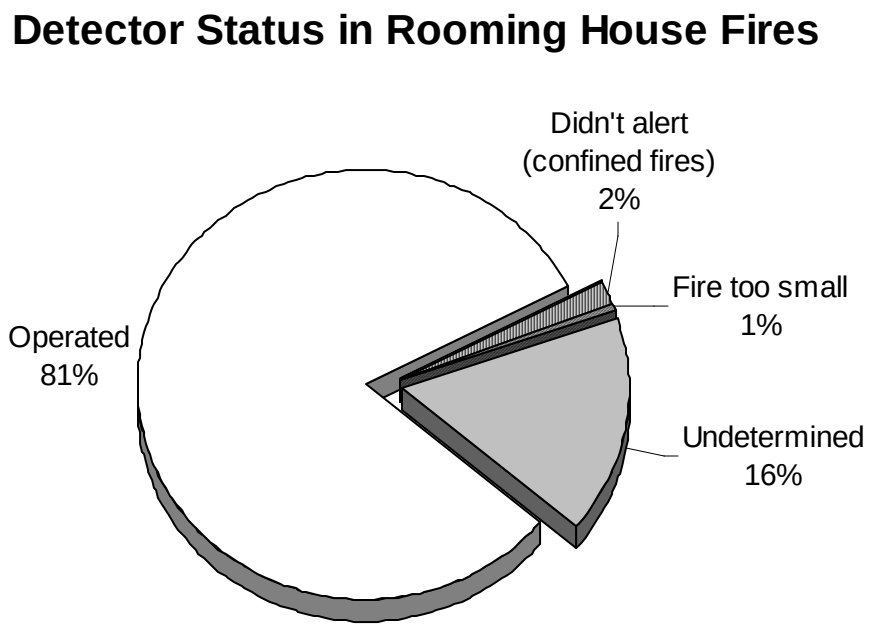


86% of Rooming House Fires Started in the Kitchen
Eighty-six percent (86%) of rooming house fires started in the kitchen. Four percent (4%) started in the bedroom, 3% started in heating equipment rooms, and 1% began in the laundry room. However, if we assume that all of the confined cooking fires occurred in the occupants bedrooms because most rooming house residents cook in their own bedrooms, 88% of the fires would have occurred in the bedroom, and only 2% would have occurred in the kitchen area.

90% of Rooming House Fires Were Confined to Non-Combustible Containers[17]
Two hundred and sixty-nine (269), or 90% of all building fires in rooming houses, were reported as confined to non-combustible containers in 2007. Two hundred and fifty-one (251) were cooking fires contained to a non-combustible container accounting for 84% of all the fires in rooming or boarding houses in 2007. Nine (9) fires, accounting for 3% of rooming house fires were confined indoor rubbish fires. Eight (8), or 3%, were fires confined to a fuel burner or boiler malfunction. There was one fire accounting for less than 1% of these fires that was confined to a chimney or flue.

Confined fires in rooming houses increased by 52 incidents, or 24%, from the 217 reported in 2006.

Detectors Alerted Occupants in Over 81% of Fires
Smoke or heat detectors operated and alerted the occupants in 219, or 81%, of the rooming house fires in 2007. In 2% of these fires[18], the detectors did not alert the occupants. There were no reported fires where detectors were present but did not operate. There were also no fires where detectors weren't present at all. The fire was too small to trigger the detector in 1% of these residential fires. Smoke detector performance was undetermined in 45 incidents, or 16% of Massachusetts' 2007 rooming house fires.



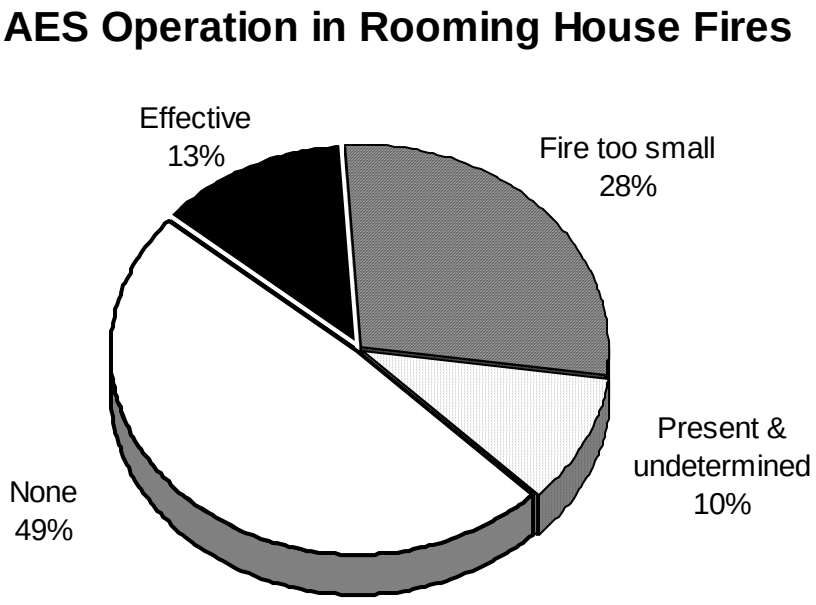
[17] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.
[18] These represent confined fires where it was reported that the detector did not alert the occupants.

Smoke detectors are required in rooming houses. Local communities may elect to adopt the provisions of Massachusetts General Law Chapter 148, Section 26H. This law mandates an adequate system of automatic sprinklers in every lodging or boarding house in the community. Sprinklers must be installed within five years after the provision is accepted. This was enacted after 15 people died in a Beverly rooming house fire on July 4, 1984.

The decline in rooming house fires, especially fatal rooming house fires, is one of the great fire prevention success stories. Prior to the passage of Massachusetts General Law Chapter 148 Section 26H, rooming houses were known as "death traps' because of the large number of fire deaths that occurred in them every year. This is no longer true.

AES Present in Over 1/2 of Rooming House Fires
Automatic Extinguishing Systems (AES) were reportedly present in 20, or 51%, of the 39 rooming house fires where AES presence was known. In the other 24 incidents, or 57% there were no systems present.

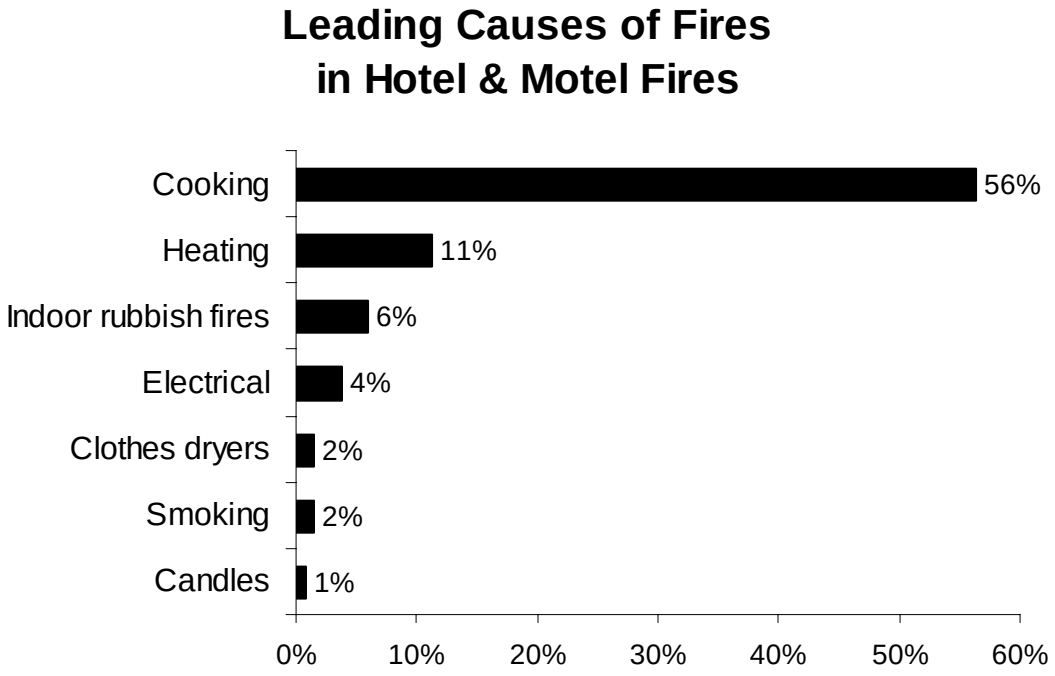
AES Effective in 13% of Rooming House Building Fires
The fire was too small to activate the automatic extinguishing system (AES) in 28% of the 39 rooming house building fires in 2007 where AES status was known. In 13% of these incidents the AES operated effectively. In 10% of rooming house fires systems were present but it was undetermined if they operated. In 49% of the cases, a system had not been installed.



Hotel and Motel Fires

133 Fires, 4 Civilian Injuries & $1.3 Million in Damages
One hundred and thirty-three (133) building fires in hotels, motels and home hotels caused four civilian injuries, one fire service injury and $1.3 million in estimated property damage. The average dollar loss per fire was $9,790. In 2007, 1% of the 13,441 residential building fires occurred in hotels, motels, or home hotels. Fires in hotels and motels were up 2% from 130 in 2006.

Cooking Caused Over 1/2 of Hotel & Motel Fires
Of the 133 fires in hotels and motels in 2007, cooking was the leading cause, accounting for 56%, or more than half, of the fires in this occupancy. Heating equipment was responsible for 11% of these fires. Indoor rubbish fires accounted for 6% of these fires. Electrical problems caused 4% of the hotel and motel fires. Clothes dryers and smoking each caused 2% of these fires. Candles caused 1% of the fires in Massachusetts hotels and motels in 2007.



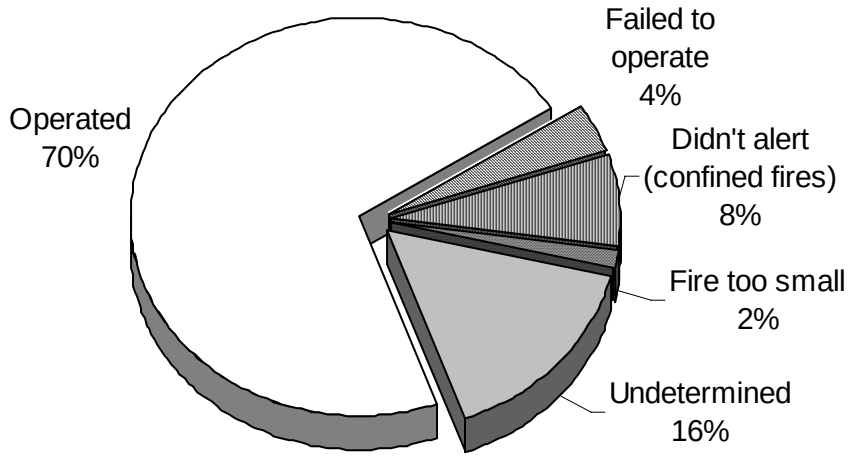
Over 1/2 of Hotel and Motel Fires Started in the Kitchen
For hotel and motel fires 58% of the fires started in the kitchen. Seven percent (7%) of these fires began in heating rooms or areas. Four percent (4%) of these fires started in chimneys or flues; and 3% started in bedrooms.

73% of Hotel or Motel Fires Confined to Non-Combustible Containers[19]
Ninety-seven (97), or 73% of all building fires in hotels and motels, were reported as confined to non-combustible containers in 2007. Seventy-five (75) were cooking fires contained to a non-combustible container accounting for 56% of these fires. Nine (9), or 7%, of the fires in hotels or motels were confined to a fuel burner or boiler malfunction. Indoor rubbish fires caused eight, or 6%, of the hotel and motel fires in 2007. Five (5), or 4%, of hotel or motel fires in 2007 were confined to a chimney or flue.

The number of contained fires rose in 2007. Confined fires in hotels and motels increased by seven incidents, or 8%, from the 90 reported in 2006.

Detectors Operated in 70% of Fires
Smoke or heat detectors operated in 95, or 70%, of the hotel or motel fires in 2007. In 8% of these fires[20], the detectors did not alert the occupants. Detectors were present but did not operate in 4% of these incidents. There were no reported fires where there were no detectors present at all. The fire was too small to trigger the detector in 2% of these residential fires. Smoke detector performance was undetermined in 21 incidents, or 16% of Massachusetts' 2007 hotel or motel fires.

Detector Status in Hotel & Motel Fires



[19] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.
[20] These represent confined fires where it was reported that the detector did not alert the occupants.

1 Detector Failed From Power Failure or Shut-off
One (1) of the five detectors that failed in hotel or motel fires in 2007 failed because of a power failure or shut-off. It was undetermined why the other four smoke detectors were inoperable.

AES Absent in Almost 1/2 of Hotel and Motel Residential Building Fires
Automatic extinguishing systems (AES) were present and operated effectively in four, or 13%, of the 31 hotel and motel building fires in 2007 where AES status was known. In 11, or 35%, of these incidents, the fire was too small to activate the system. In one, or 3%, the system failed to operate. In 15, or 49%, of the cases, there was no AES system. AES performance was not classified for seven incidents.

Federal Hotel and Motel Fire Safety Act of 1990 Implemented in Massachusetts
The Federal Hotel and Motel Fire Safety Act of 1990 was implemented in Massachusetts in 1992. To increase the level of fire safety in hotels and motels, this act limits travel by federal employees to properties meeting certain fire safety standards. Each guestroom must be equipped with a hard-wired, single-station smoke detector installed in accordance with the National Fire Protection Association (NFPA) Standard 72. Hotels and motels over three stories in height must also be protected by an automatic sprinkler system installed in the sleeping area of each room in accordance with NFPA Standard 13 or 13R.

Only properties that meet the fire safety standards are listed in the Federal Travel Directory used by federal employees to select lodging while on official business.

The last provision of this act took effect on October 1, 1996. Since that time, 90% of all travel nights by federal employees must be in 'approved accommodations.' The Congressional authors of the act have clarified the term 'place of public accommodation' to include hotels and motels and all such meeting and sleeping facilities except those specifically exempted. Private conference centers are now included. Meetings funded wholly or in part by federal funds are subject to this requirement. For a list of certified hotels go to the U.S. Fire Administration's website at http://www.usfa.fema.gov/appplications/hotel.

Despite the federal goal of attempting to improve life safety in hotels and motels, the sprinkler provision only applies to buildings over three stories. In the 15 hotel fires that reported having no AES, 13, or 87%, were three stories or less.

State Regulations Require Quarterly Innholder Inspections
State regulations require local fire departments to conduct quarterly inspections of the premises specified in inn holder licenses.

Hotel-Motel Safety
It is important to consider fire safety when selecting accommodations.

- Choose lodging equipped with sprinklers and smoke detectors in each room.
- If you are hearing impaired, you may request a room with an appropriate smoke detector with a flashing strobe light.

- Think about fire safety when checking into a hotel or motel. Count the number of doors down the hall to the nearest fire exit staircase. Remember to never use the elevator in case of fire. Travelers should test the smoke detector in their room.
- It is recommended that you keep the room key, eyeglasses and a flashlight on the night table. If a fire occurs or a fire alarm sounds, take them with you and go out the door. However before opening the door, test the door with the back of your hand. If the door feels cool, open the door a crack. Be ready to close the door if hot air, flames, or smoke rush through the crack. If this does not occur, yet the hall is hazy with smoke, crawl down the hall counting the doors to the nearest stairway exit. If this exit cannot be reached, turn around and count the doors back to your room. Unlock the door and re-enter.
- If it is unsafe to leave the room during a fire:
  Fill the tub with cold water; stuff wet towels around the door to keep the smoke out; if possible, open a window and hang a sheet outside to signal for help; cover your face with a wet cloth and stay low if smoke gets in the room; do not jump.
- Try to call out to emergency services on a cell phone or house phone and advise the emergency dispatcher of your exact location within the hotel.

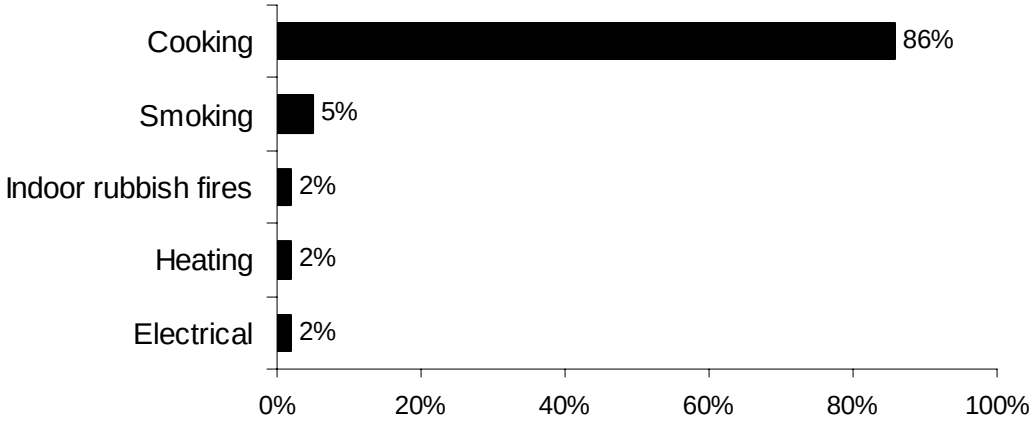
Residential Board & Care Fires

141 Fires Caused 1 Civilian Death & $189,971 in Damages
One hundred and forty-one (141) residential board and care building fires caused one civilian death and an estimated dollar loss of $189,971 in damages. The average dollar loss per fire was $1,347. In 2007, 1% of the 13,441 residential building fires occurred in residential board and care buildings. Fires in residential board and care facilities were up 6% from 133 in 2006.

This Property Use code includes long term health care facilities, halfway houses and assisted care housing facilities. It excludes nursing homes.

Cooking Accounted for 86% Residential Board & Care Fires
In the 141 incidents of residential board and care building fires, the leading cause was cooking, accounting for 121 incidents, or 86%, of the fire incidents. Smoking caused 5% of these incidents. Indoor rubbish fires, heating equipment and electrical problems each caused three, or 2%, of the fires in residential board and care facilities in 2007.

Leading Causes of Fires in Residential Board & Care Facility Fires



87% of Residential Board & Care Fires Started in the Kitchen
Of the 141 residential board and care building fires, 122, or 87%, started in the kitchen. Three (3), or 2%, began in a heating room or area. An exterior balcony, a wall assembly, and a ceiling and floor assembly were each the area of origin for one, or 1%, of fires in residential board and care facilities.

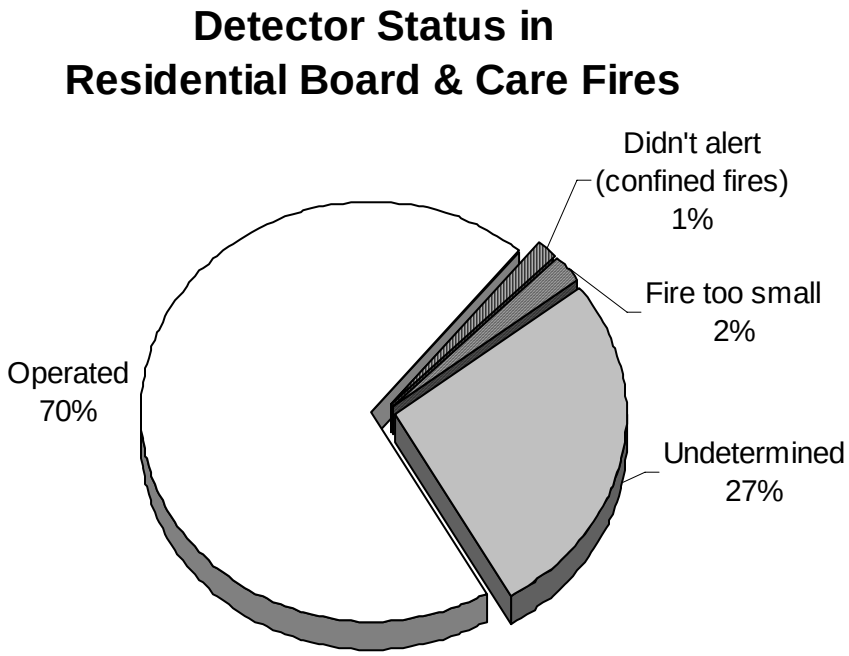
88% of Board & Care Fires Confined to Non-Combustible Containers[21]
One hundred and twenty-four (124), or 88% of all building fires in residential board and care facilities, were reported as confined to non-combustible containers in 2007. One hundred and seventeen (117) were cooking fires contained to a non-combustible container accounting for 83% of these fires. Four (4), or 3%, of these fires were contained rubbish fires. Three (3), or 2%, of the fires in residential board and care facilities was confined to a fuel burner or boiler malfunction.

The number of contained fires rose in 2007. Confined fires in residential board and care facilities increased by four incidents, or 3%, from the 120 reported in 2006.

Detectors Operated in 70% of Fires
Smoke or heat detectors operated in 98, or 70%, of the residential board and care facility fires in 2007. In 1% of these fires[22], the detectors did not alert the occupants. There were no reported fires where there were no working detectors. The fire was too small to trigger

[21] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.
[22] These represent confined fires where it was reported that the detector did not alert the occupants.

the detector in 2% of these residential fires. Smoke detector performance was undetermined in 38 incidents, or 27% of Massachusetts' 2007 residential board and care facility fires.



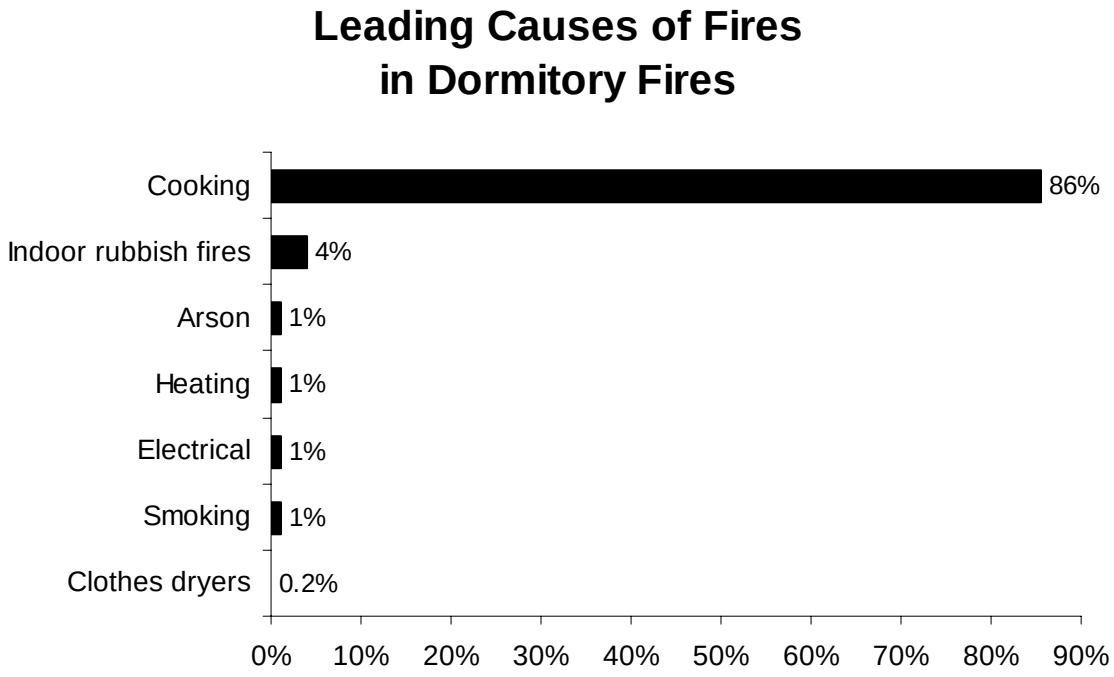
No AES in Almost 2/3 of Residential Board & Care Building Fires
Automatic extinguishing systems (AES) were present in three, or 15%, of the 20 residential board and care building fires where AES presence was known. In one of these incidents, or 6%, the system operated effectively. In two, or 13%, of these incidents, the fire was too small to activate the system. In 13, or 81%, of these incidents there were no systems present.

Dormitory Fires

408 Fires & $561,595 in Damages
Four hundred and eight (408) dormitory building fires caused one fire service injury and an estimated dollar loss of $561,595 in damages. The average dollar loss per fire was $1,376. In 2007, 3% of the 13,441 residential building fires occurred in dormitories. Fires in dormitories were up 2% from 400 in 2006.

Cooking Accounted for 86% of Dormitory Fires
In the 408 incidents of dormitory fires, the leading cause was cooking, accounting for 349, or 86%, of these fires. Indoor rubbish fires were responsible for 4% of these

incidents. Arson, heating equipment, electrical problems, and smoking were each responsible for 1% of these incidents. Clothes dryer fires accounted for less than 1% of Massachusetts dormitory fires in 2007.



87% Dormitory Fires Started in the Kitchen

For dormitory fires, 87% of the fires started in the kitchen[23]. One percent (1%) began in bathrooms and another 1% began in substructure areas. However, if we assume that all of the confined cooking fires occurred in the occupants bedrooms because many dormitory residents cook in their own bedrooms, 85% of the fires would have occurred in the bedroom, and only 2% would have occurred in the kitchen area.

90% of Dormitory Fires Confined to Non-Combustible Containers[24]

Three hundred and sixty-nine (369), or 90% of all building fires in dormitories, were reported as confined to non-combustible containers in 2007. Three hundred and forty-

[23] The high number of fires that are reported to have originated in the kitchen may be misleading in dormitory fires. Ninety-seven percent (97%) of the cooking fires in dormitories were confined cooking fires. In most cases we assign the area of origin of a confined cooking fire to the kitchen. However in the case of dormitories many of these fires probably occur in the students bedrooms when they are using hot plates or microwave ovens.

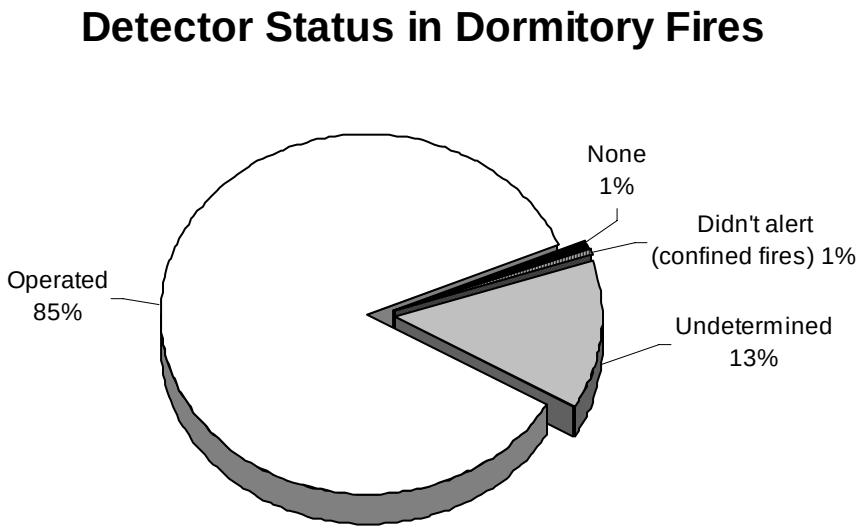
[24] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

four (344) were cooking fires[25] contained to a non-combustible container accounting for 88% of all dormitory fires. Confined fires do not report an area of origin and we generally assume that confined cooking fires start in the kitchen. For dormitories it may be surmised that many of these occurred in the students' bedrooms instead of the kitchen. Indoor rubbish fires accounted for 21, or 5% of the fires in dormitories in 2007. Three (3), or 1%, of fires in Massachusetts' dormitories in 2007 were confined to a fuel burner or boiler malfunction; and one, or less than 1%, was confined to a commercial compactor.

The number of contained fires rose in 2007. Confined fires in dormitories increased by seven incidents, or 2%, from the 362 reported in 2006.

Detectors Operated in 85% of Fires

Smoke or heat detectors operated and alerted the occupants in 348, or 85%, of the dormitory fires in 2007. In 1% of these fires[26], the detectors did not alert the occupants. There were no reported fires where detectors were present but did not operate. There were no detectors present at all in 1% of these fires. There were no reported fires where the fire was too small to trigger the detector. Smoke detector performance was undetermined in 54 incidents, or 13% of Massachusetts' 2007 dormitory fires.



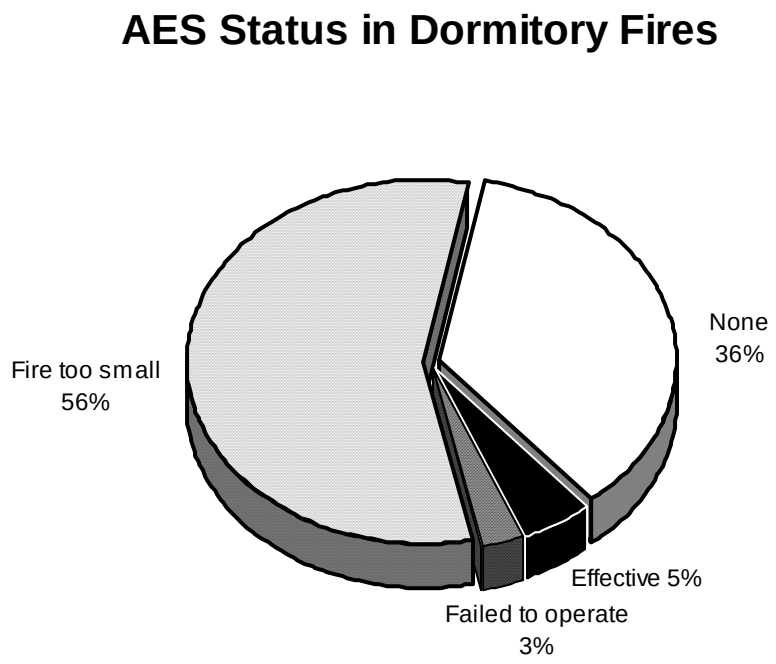
AES Present in 64% of Dormitory Fires

Automatic extinguishing systems (AES) were present and operated effectively in two, or 5% of the 39 building fires in dormitories where AES status was known. In 56% of these

[25] Usually it is assumed that confined cooking fires occur in the kitchen. However, it is our belief that in dormitory fires, the vast majority of these fires occur in the students' bedrooms.

[26] These represent confined fires where it was reported that the detector did not alert the occupants.

incidents, the fire was too small to activate the system. In one, or 3% of these incidents, the system failed to operate. In 14, or 36%, of these incidents there were no systems present.



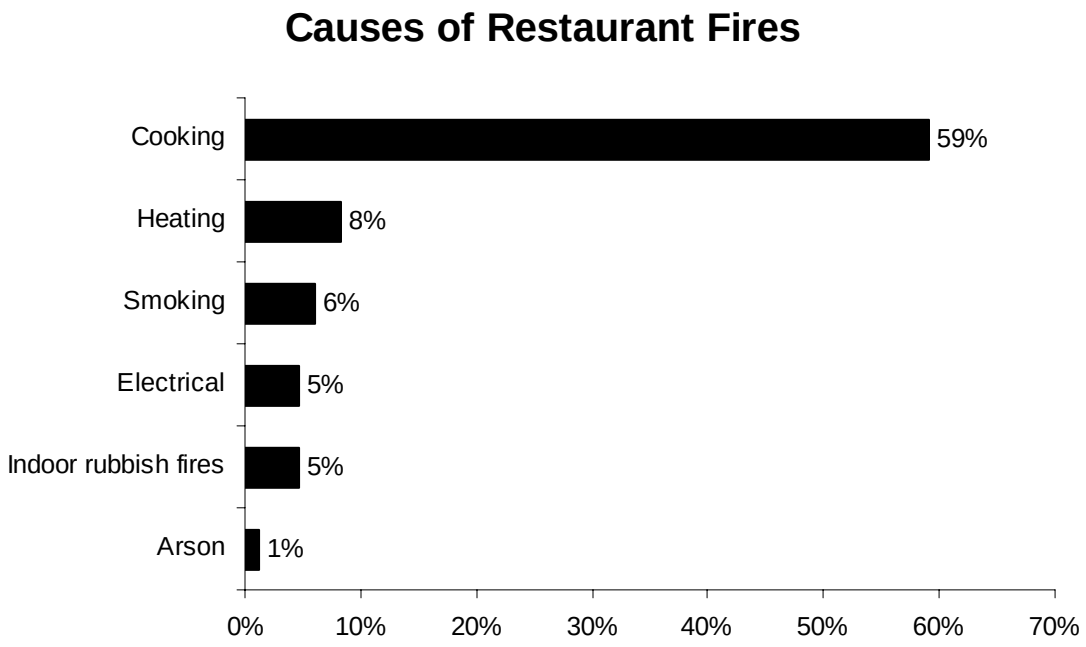
The Center for Campus Fire Safety encourages parents to ask questions of their children's fire safety when away from home, including whether the student will be housed in a sprinklered dormitory.

Restaurant Fires

316 Fires, 2 Fire Service Deaths $9.8 Million in Damages

Three hundred and sixteen (316) building fires in 2007 occurred in restaurants and other eating and drinking establishments, causing two fire service deaths, two civilian injuries, 27 firefighter injuries, and an estimated dollar loss of $9.8 million. The average dollar loss per fire was $31,076. In 2007, 2% of the 16,574 building fires in Massachusetts occurred in restaurants. Fires in restaurants were up 20% from 264 in 2006.

59% of Restaurant Fires Caused by Cooking
Cooking caused 59% of the restaurant fires; heating equipment caused 8%; smoking accounted for 6% of these fires; electrical problems caused 5%; indoor rubbish fires were also responsible for 5% of these fires; and 1% of the fires in restaurants in 2007 were considered intentionally set.



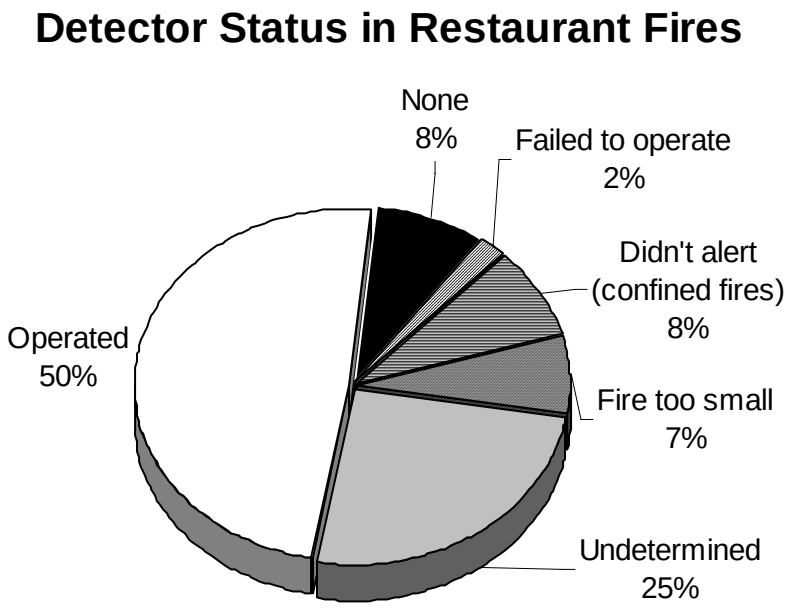
62% of Restaurant Fires Started in the Kitchen
Sixty-two percent (62%) of the 316 fires in restaurants, started in the kitchen. Four percent (4%) each began in a heating room or area, and 2% began in a chimney or flue.

63% of Restaurant Building Fires Confined to Non-Combustible Containers[27]
Two hundred (200), or 63% of all restaurant building fires, were reported as confined to non-combustible containers in 2007. One hundred and sixty-six (166) were cooking fires contained to a non-combustible container accounting for 53% of restaurant building fires. Fourteen (14), or 4%, of these fires were contained rubbish fires. Twelve (12), or 4%, were fires confined to a fuel burner or boiler malfunction. Six (6), or 2%, of all restaurant building fires reported in 2007 were fires confined to a chimney; and two, or 1%, were confined to a commercial compactor.

The number of contained fires rose in 2007. Confined fires in restaurants increased by 41 incidents, or 26%, from the 159 reported in 2006.

[27] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

Detectors Operated in 1/2 of Fires
Smoke or heat detectors operated in 152, or 50%, of the restaurant fires in 2007. In 8% of these fires[28], the detectors did not alert the occupants. Detectors were present but did not operate in 2% of these incidents. In 8% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 7% of the restaurant fires. Smoke detector performance was undetermined in 79 incidents, or 25% of Massachusetts' 2007 restaurant fires.

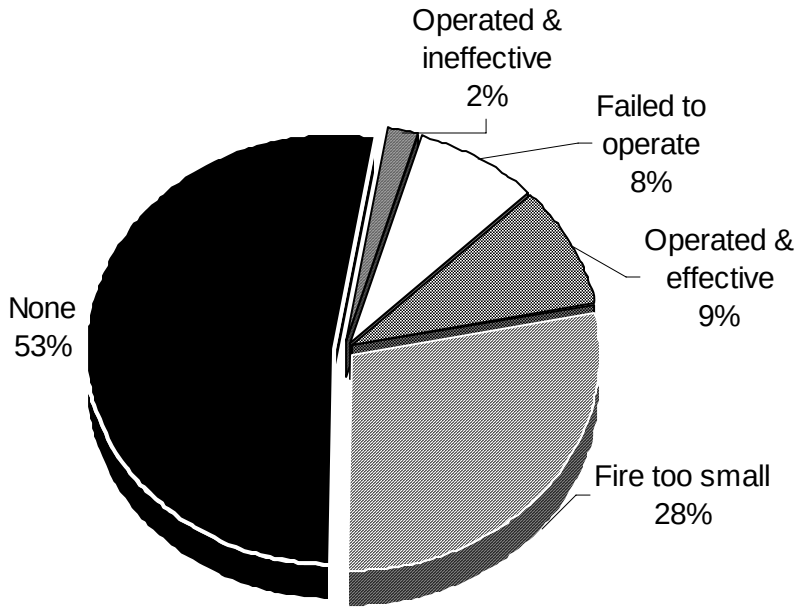


Restaurants Must Have Kitchen Exhaust & Fire Extinguishing Systems
According to Massachusetts 527 CMR 11, restaurants must have commercial kitchen exhaust systems and fire extinguishing systems installed and maintained in accordance with NFPA 96 for any cooking equipment that produces grease-laden vapors. An automatic fire extinguishing system would be the primary protection and portable fire extinguishers would be used as a secondary backup. These systems are usually located in the direct vicinity of and specially designed for cooking equipment such as stoves, deep fryers and ovens. In 2007 this was changed from the previous standard, 527 CMR 10.03 (8).

No AES in Over 1/2 of Restaurant Fires
Automatic extinguishing systems (AES) were present and operated effectively in 9% of the 99 restaurant fires where AES status was known. In 2% of these fires, systems were present but operated ineffectively. In 8% of these fires, an AES was present but did not operate. In 28% of these fires, the fire was too small to activate the system. No AES equipment was present in 53% of the restaurant fires in 2007. AES status was unknown in 23 incidents. These incidents were excluded from the percentage calculations.

[28] These represent confined fires where it was reported that the detector did not alert the occupants.

AES Status in Restaurant Fires



Largest Loss Restaurant Fires

In 2007, there were three large loss restaurant fires. These three fires represent 47% of the total dollar loss of all Massachusetts restaurant fires in 2007.

- On July 15, 2007 at 5:34 a.m., the Waltham Fire Department was called to an undetermined fire at a restaurant. The fire began underneath the take-out counter. The most probable cause was either an electrical malfunction or a natural gas leak. This blaze was the largest loss fire in this category of building fires, with an estimated $1.7 million worth of damage done. Five (5) firefighters were injured at this fire. Smoke detectors were present and operated. This building did not have sprinklers.

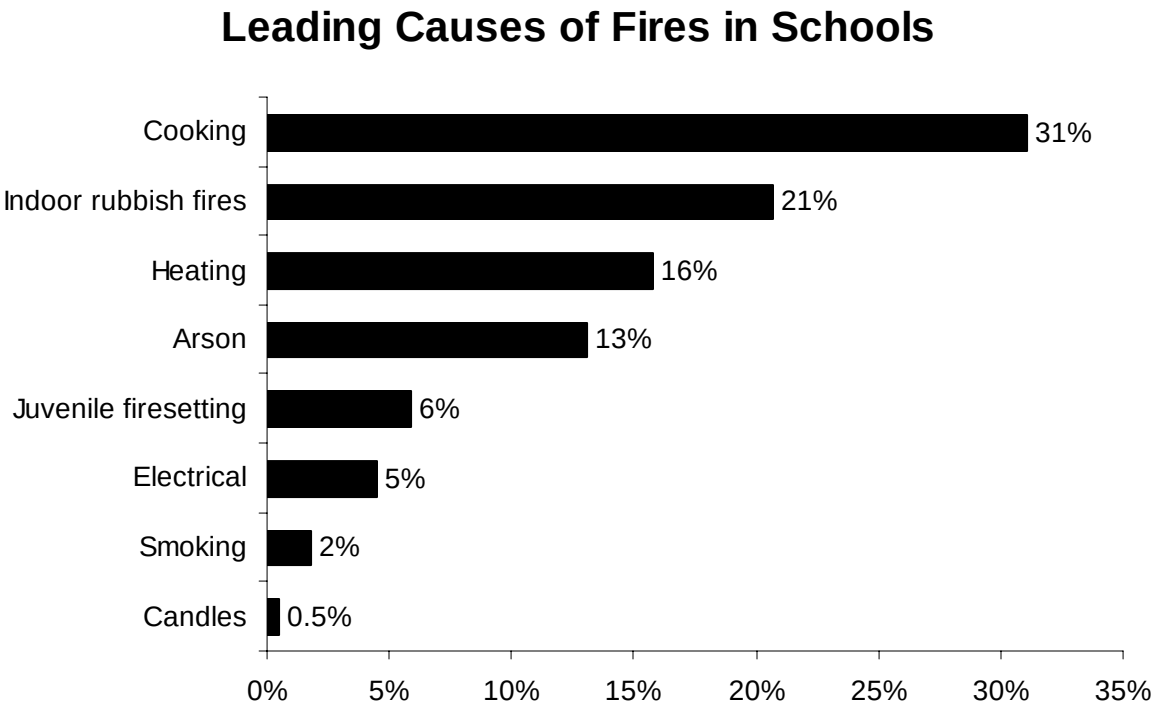
- On October 20, 2007, at 4:41 p.m., the Bourne Fire Department was called to an electrical fire in a restaurant. The fire was started by arcing in a wall outlet. This was the second largest loss fire for a restaurant in 2007, with an estimated $1.5 million in damages. Six (6) firefighters were injured fighting this fire. Smoke detectors were present and operated. This building did not have sprinklers.

- On February 15, 2007, at 8:06 p.m., the Mansfield Fire Department was called to fire in a restaurant under construction that was started by a welding torch. The torch ignited some of the plywood paneling in the building. Two (2) firefighters were injured battling this blaze. Smoke detectors had not been installed yet and the building was not sprinklered. Damages were estimated to be $1.4 million.

School Fires

222 Fires Caused 1 Civilian Injury & 3 Fire Service Injuries
Two hundred and twenty-two (222) building fires in schools[29] caused one civilian injury, three fire service injuries and $16.1 million in property damages. The average dollar loss per fire was $72,688. In 2007, 1% of the building fires occurred in schools. Fires in schools decreased by 9% from 245 in 2006.

Almost 1/3 of School Fires Were Cooking Fires
Almost one-third (31%) of the 222 fires reported to have occurred in Massachusetts schools were caused by cooking. Twenty-one percent (21%) of the school fires were confined indoor rubbish fires for which no causal information was reported[30]. Problems with heating equipment accounted for 16% of these fires. Arson accounted for 13% of these fires. Identified juvenile-set fires accounted for 6% of the fires in schools. Electrical problems caused 5%. Smoking caused 2% of the reported fires in schools in 2007. Smoking by students and faculty is generally prohibited in schools. Candles caused less than 1% of the fires in Massachusetts' schools in 2007.



[29] School fires include version 5 Property Use codes 210 – Schools, non-adult, 211 – Preschool, 213 – Elementary school, including kindergarten, and 215 – High school/junior high school/middle school.
[30] Confined fires, like indoor rubbish fires, do not require causal information to be completed. However some reports do include this information and we are able to classify these fires as other types of fires like arsons or juvenile-set fires.

Almost 1/3 of School Fires Started in the Kitchen
Thirty-two percent (32%) of the fires in schools started in kitchens; 15% started in a heating room or area; 9% began in a bathroom; 2% started in assembly areas without seats; and 2% started in a hallway or corridor. Many reports of school fires do not include the area of origin of the fire. The area of ignition for confined indoor rubbish fires is not required to be reported.

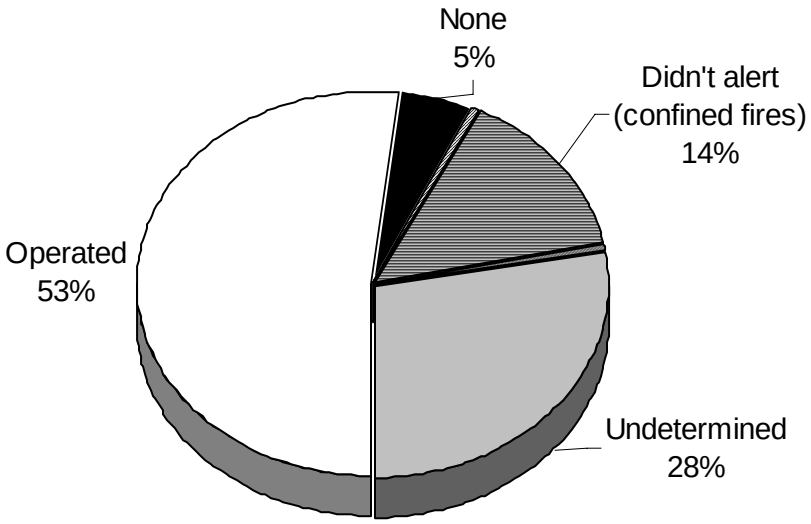
Schools Required to Report Fires by Law
Beginning in September of 2006 with Chapter 80 of the Acts of 2006, An Act Relative to the Reporting of Fires in School, "…any school that provides instruction to pupils in any of grades 1 to 12, shall immediately report any incident involving the unauthorized ignition of any fire within the school building or on school grounds to the local fire department." Upon receipt of this report from the school, the local fire department must then complete an MFIRS report. It is our belief that this new statute will generate a substantial increase in reported fires in schools and will allow us to have a better understanding of where and how these fires are taking place. However in its first full year in place, we had a small decrease in the number or reported school fires.

70% of School Building Fires Confined to Non-Combustible Containers[31]
One hundred and fifty-five (155), or 70% of all school building fires, were reported as confined to non-combustible containers in 2007. Sixty-nine (69) were cooking fires contained to a non-combustible container accounting for 31% of school fires. Fifty-three (53), or 24%, of all school fires were contained rubbish fires. Of these 53 confined rubbish fires, three were considered intentionally set or arson, one was determined to be set by juveniles. Thirty-two (32), or 14%, were fires confined to a fuel burner or boiler malfunction. One (1), or less than 1%, was confined to an incinerator. Confined fires in schools decreased by five incidents, or 3%, from the 160 reported in 2006.

Detectors Operated in Over 1/2 of Fires
Smoke or heat detectors operated in 114, or 53%, of the school fires in 2007. In 14% of these fires[32], the detectors did not alert the occupants. There were no reported fires where detectors were present but did not operate. In 5% of these fires, no detectors were present at all. There were no reported fires where the fire was too small to trigger the detector. Smoke detector performance was undetermined in 61 incidents, or 28% of Massachusetts' 2007 school fires.

[31] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.
[32] These represent confined fires where it was reported that the detector did not alert the occupants.

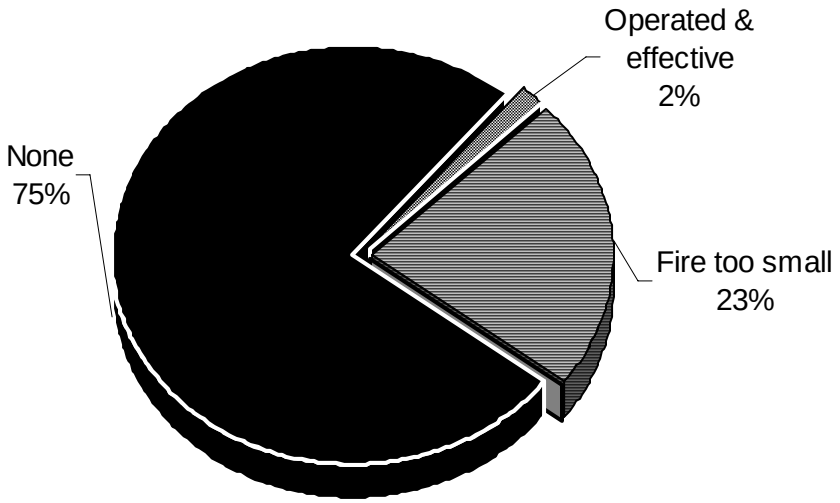
Detector Status in School Fires



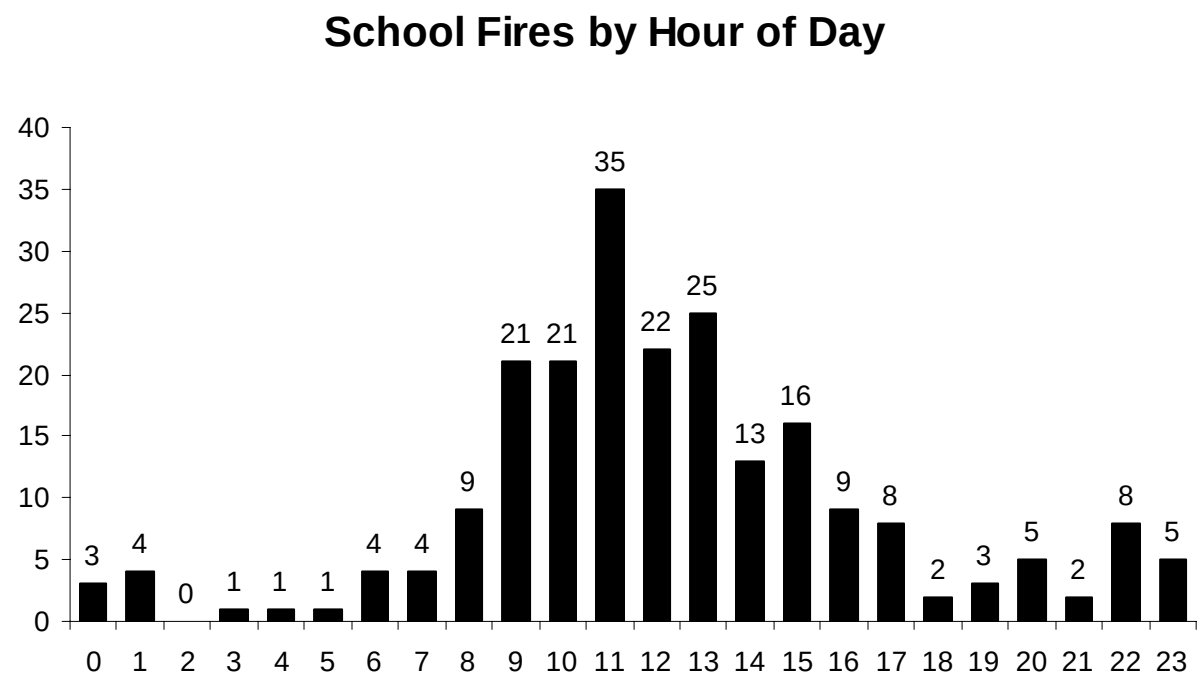
No AES in 3/4 of Fires in Schools

There was one school fire, or 2%, where automatic extinguishing systems (AES) were reported to have been present and operated. In 23% of school fires, the fires were too small to trigger the system. In 75% of the fires in schools, there were no systems. AES performance was unknown in 10 fires in Massachusetts' schools in 2007. These incidents were excluded from the percentage calculations.

AES Status in School Fires



Most School Fires Occur When School is in Session During Lunch
School fires generally occur during the school day. Seventy-three percent (73%) of the school building fires occurred during the hours between 8:00 a.m. and 3:00 p.m. with a sharp increase between 9:00 a.m. and 12:00 p.m. The following graph shows the hour of alarm on the 24-hour clock. Midnight to 1:00 a.m. is represented by 0, 1:00 a.m. to 2:00 a.m. is represented by 1, etc. Ninety percent (90%) of these fires occurred between Monday and Friday.

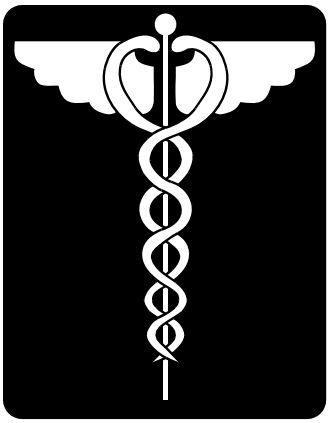


Schools Must Hold Fire Drills Four Times a Year
Effective fire prevention has undoubtedly contributed to the low injury rate at school fires. According to 527 CMR 10.09, fire drills must be conducted four times a year. The fire department must approve an evacuation plan developed by someone from the school system. All teachers must receive instructions about the plan. Students must be advised of the fire drill procedure or take part in a fire drill within three days after entering school.

Somerville Had Largest Loss School Fire

- On December 9, 2007, at 4:40 a.m., the Somerville Fire Department was called to a fire at the East Somerville Community School. A mechanical malfunction of the heating system caused the fire. Three (3) firefighters were injured at this fire. Detectors were present and operated. The building had no sprinklers. Damages from this fire were estimated to be $16 million.

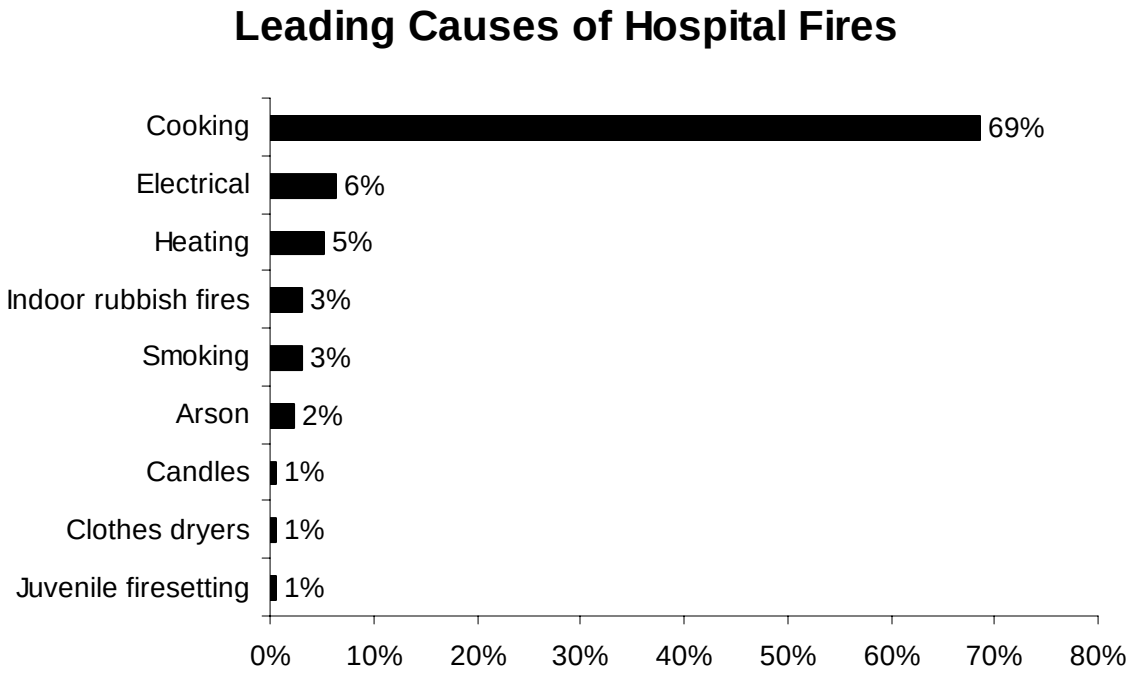
Fires in Hospitals



172 Fires Caused 1 Civilian Casualty
One hundred and seventy-two (172) building fires in hospitals caused one fire service casualty and an estimated dollar loss of $568,366. The average loss per fire was $3,304. In 2007, 1% of the 16,574 building fires occurred in hospitals. Fires in hospitals were up 5% from 164 in 2006.

This property use section includes, mental institutions, including facilities for the criminally insane; medical, psychiatric and specialty hospitals where treatment is provided on a 24-hour basis; hospices; and clinics and clinic type infirmaries. It does not include doctor's or dentist's offices; nursing homes; alcohol or substance abuse centers; and mental retardation/development disability facilities.

Cooking Caused Over 2/3 of Hospital Fires
Unattended cooking and other unsafe cooking practices caused 69%, or over two-thirds of the fires in hospitals in 2007. Electrical fires caused 6% of these fires; and heating equipment accounted for 5% of these fires. Indoor rubbish fires and smoking each caused 3% of these fires. Arson accounted for 2% of hospital fires. Candles, clothes dryers and juvenile-set fires were each responsible for 1% of the fires in hospitals in 2007.

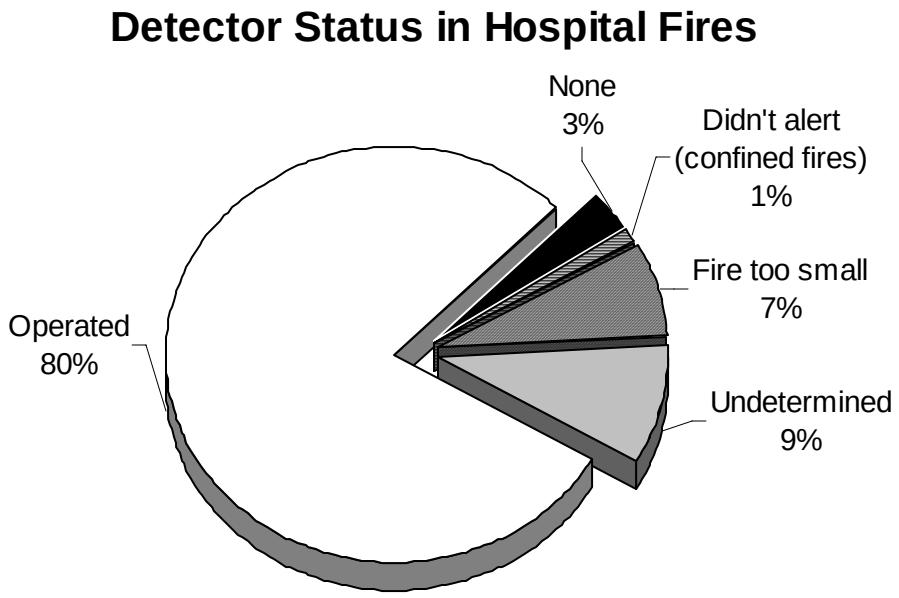


Over 2/3 of Hospital Fires Began in the Kitchen
Sixty-eight percent (68%), of the fires in hospitals in 2007, started in the kitchen; 4% occurred in heating rooms or areas; and 2% occurred in each bathrooms, function rooms and service rooms.

78% of Hospital Building Fires Confined to Non-Combustible Containers[33]
One hundred and thirty-four (134), or 78% of all hospital building fires, were reported as confined to non-combustible containers in 2007. One hundred and seventeen (117), or 68%, of these fires were contained cooking fires. Seven (7), or 4%, were fires confined to a fuel burner or boiler malfunction. Six (6) were confined indoor rubbish fires accounting for 3% of hospital fires. Two (2), or 1%, were confined commercial compactor fires. A confined chimney fire and a fire confined to an incinerator each accounted for 1% of hospital fires in 2007.

The number of contained fires fell in 2007. Confined fires decreased by six incidents, or 4%, from the 140 reported in 2006.

Detectors Operated in 80% of Fires
Smoke or heat detectors operated in 136, or 80%, of the hospital fires in 2007. In 1% of these fires[34], the detectors did not alert the occupants. There were no reported fires where the detectors failed to operate. In 3% of these fires, no detectors were present at all. The

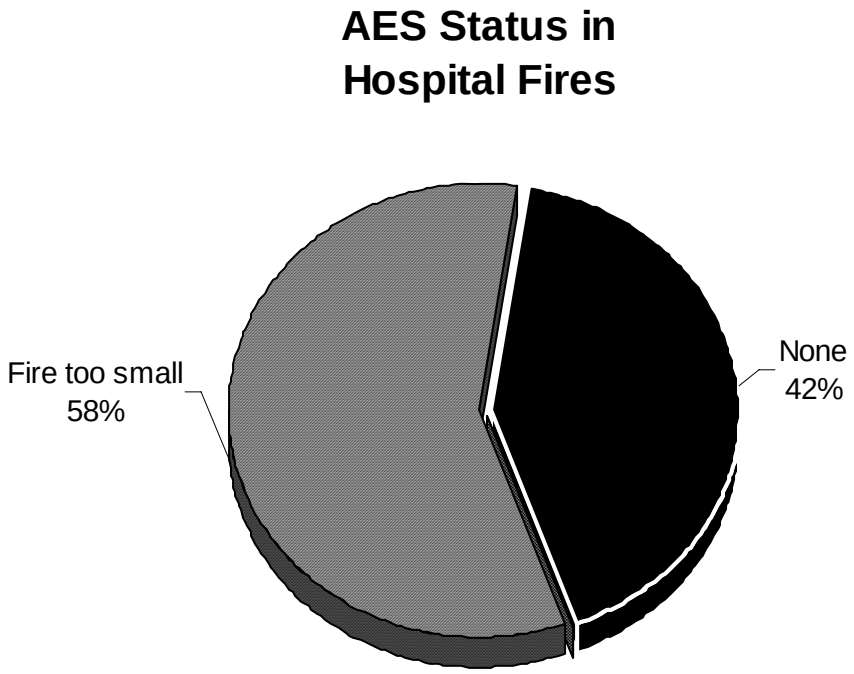


[33] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

fire was too small to trigger the detector in 7% of the hospital fires. Smoke detector performance was undetermined in 16 incidents, or 9% of Massachusetts' 2007 hospital fires.

Fire Too Small to Activate AES Systems in 58% of Fires

Of the 31 hospital fires where automatic extinguishing system (AES) performance was known, the fire was too small to activate the AES in 18, or 58%, of these fires. Forty-two percent (42%), or 13, of the hospital fires had no systems. AES performance was unknown in 10 of the fires in hospital facilities. These incidents were excluded from this analysis.



Plympton Had Largest Loss Hospital Fire in 2007

- On July 30, 2007 at 5:56 a.m. the Plympton Fire Department was called to a fire at a health clinic. The fire was started by a lightning strike. The fire did not cause any injuries but did cause an estimated $325,000 in damages. Detectors were present and operated, but there were no occupants in the building at the time of the fire. The building was not equipped with sprinklers.

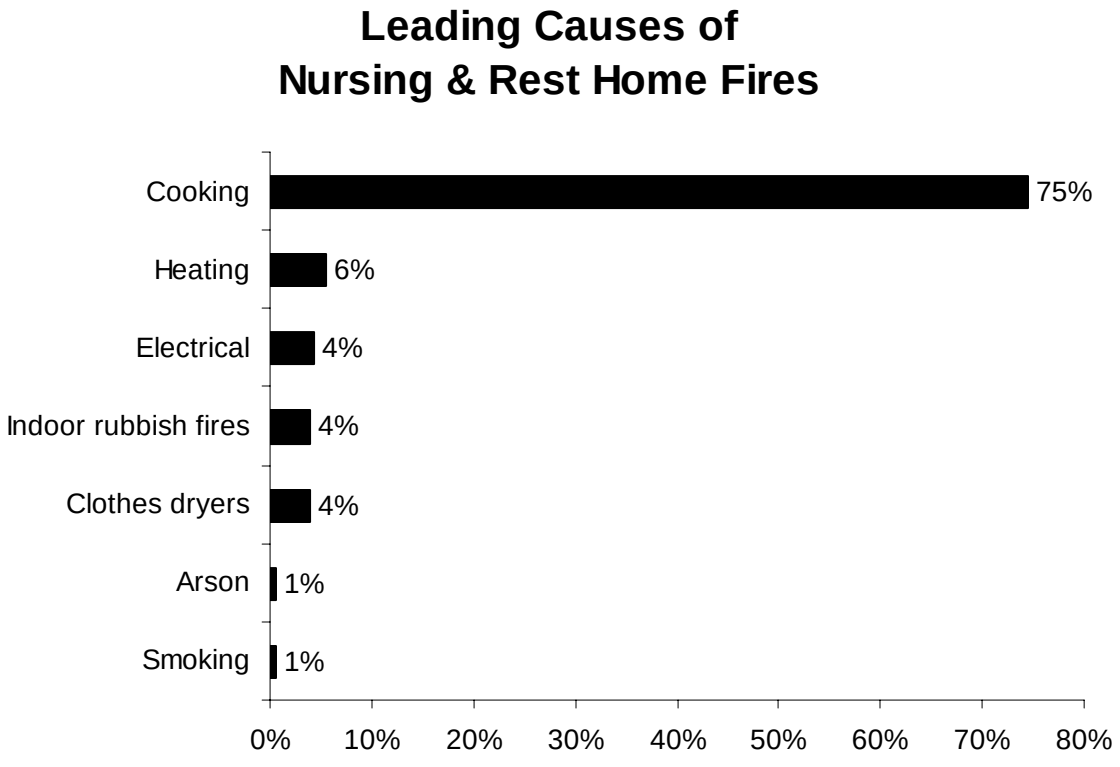
[34] These represent confined fires where it was reported that the detector did not alert the occupants.

Nursing Home and Rest Home Fires

181 Fires Caused 3 Civilian Injuries & $158,271 in Damages
One hundred and eighty-one (181) building fires occurred in nursing homes and rest homes[35] during 2007. These fires caused three civilian injuries and an estimated dollar loss of $158,271. The average loss per fire was $874. In 2007, 1% of the 16,574 building fires occurred in nursing homes and rest homes. Fires in nursing homes and rest homes increased by 40% from 129 in 2006.

This property use category includes only nursing homes licensed by the state that provide 24-hour nursing care for four or more persons.

Cooking Caused 3/4 of Nursing Home Fires
Unattended cooking and other unsafe cooking practices caused 75% of the fires in nursing and rest homes. Heating equipment caused 6% of these fires. Electrical problems, indoor rubbish fires and clothes dryers each caused 4% of nursing home fires. Arson and smoking each caused 1% of the fires in Massachusetts' nursing homes in 2007.



[35] In version 4 buildings with a Fixed Property Use code 312 – Care of the aged without nursing staff - was included in this count. However, with the conversion to version 5 codes, all v4 FPU = 312 have been converted to Property Use code 459 – Residential board and care.

3/4 of Fires Began in the Kitchen
Seventy-five percent (75%) of the nursing and rest home fires began in the kitchen. Seven percent (7%) started in the bathroom. Four percent (4%) of these fires began in a patient's room. Two percent (2%) began in the heating room or area; and another 2% occurred in the living room.

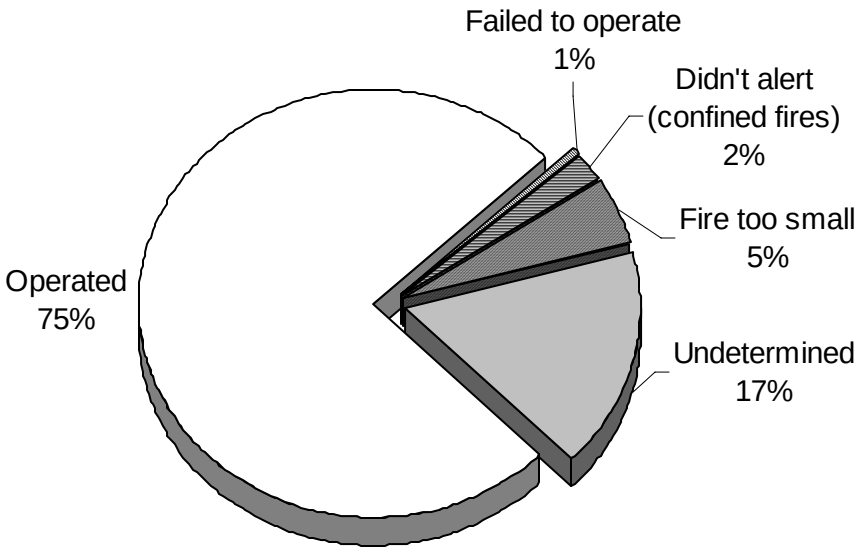
80% of Nursing Home Fires Were Confined to Non-Combustible Containers[36]
One hundred and forty-four (144), or 80%, of all nursing home building fires were reported as confined to non-combustible containers in 2007. One hundred and thirty-two (132) of the reported fires were cooking fires contained to a non-combustible container accounting for 73% of nursing home building fires. Eight (8), or 4%, of these fires were contained indoor rubbish fires. Three (3), or 2%, were fires confined to a fuel burner or boiler malfunction. There was one confined chimney fire in Massachusetts' nursing homes in 2007, accounting for 1% of these fires.

The number of contained fires in nursing homes rose in 2007. Confined fires increased by 40 incidents, or 38%, from the 104 reported in 2006.

Detectors Operated in 3/4 of Fires
Smoke or heat detectors operated in 137, or 75%, of the nursing home fires in 2007. In 2% of these fires[37], the detectors did not alert the occupants. In 1% of the fires, the detectors failed to operate. There were no reported fires where no detectors were present at all. The fire was too small to trigger the detector in 5% of the nursing home fires. Smoke detector performance was undetermined in 30 incidents, or 17% of Massachusetts' 2007 nursing and rest home fires.

[36] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.
[37] These represent confined fires where it was reported that the detector did not alert the occupants.

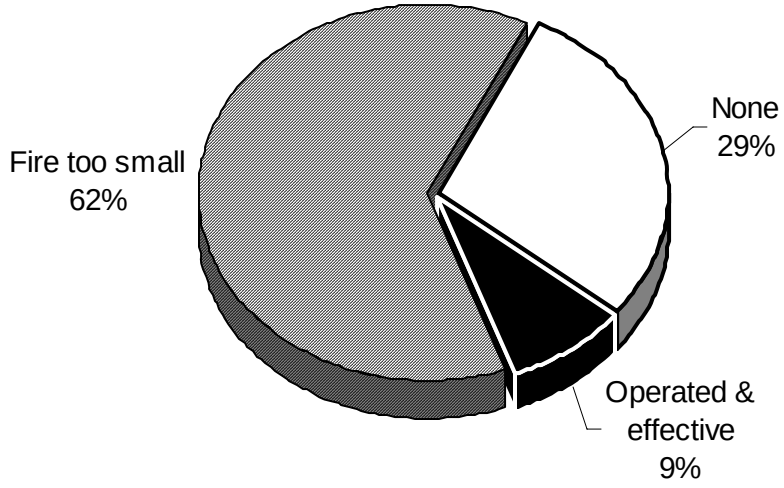
Detector Status in Nursing Home Fires



AES Operated in 9% of Nursing Home Fires

Of the 35 nursing home fires where automatic extinguishing system (AES) performance was known or reported, systems were present and operated effectively in three, or 9% of these fires. In 22 incidents, or 62% of the fires where AES performance was known, the fire was too small to activate the system. No systems were present in 10, or 29% of these fires. In eight of these incidents, AES performance was undetermined. These fires were excluded from the analysis.

AES Status in Nursing & Rest Home Fires



Norwood Has Largest Nursing Home Fire Loss

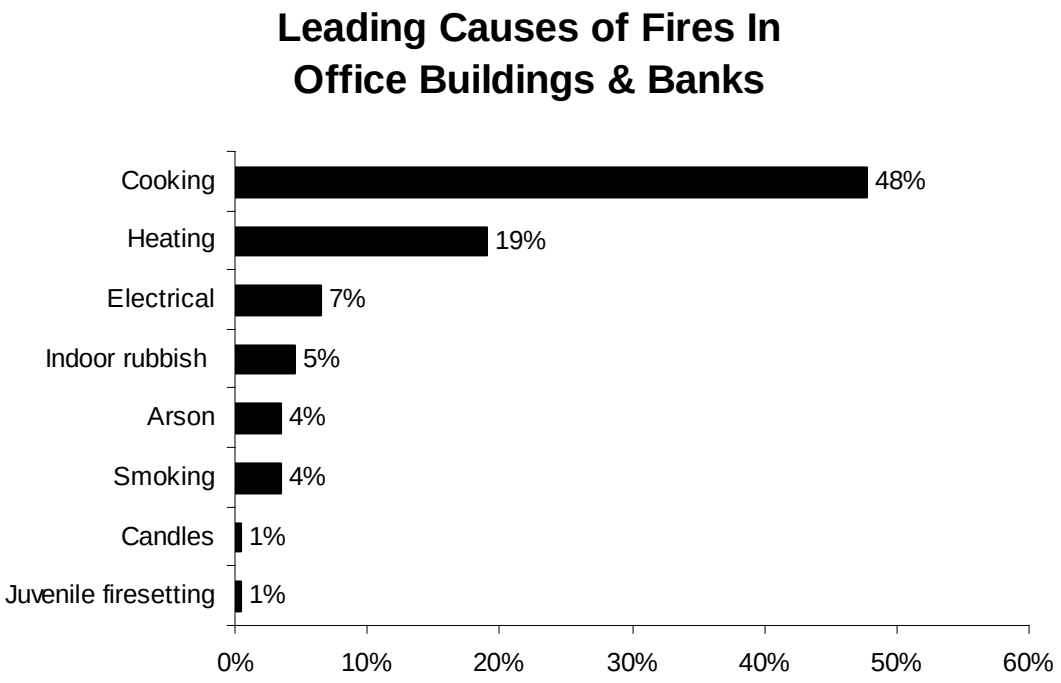
- On September 5, 2007 at 5:14 p.m., the Norwood Fire Department was called to a fire in a nursing home caused by a clothes dryer. This fire caused $45,000 in damages. No one was injured in this fire. Smoke detectors were present and alerted the staff and occupants. Sprinklers were present and effectively suppressed the fire until firefighters arrived to extinguish the fire.

Office Building and Bank Fires

199 Fires, 2 Civilian Deaths & 4 Civilian Injuries
One hundred and ninety-nine (199) building fires occurred in offices and banks during 2007. These fires caused two civilian deaths, four civilian injuries, and an estimated dollar loss of $962,388. The average dollar loss per fire was $4,685. In 2007, 1% of the 16,574 building fires occurred in offices and banks. Fires in office buildings and banks were up less than 1% from 198 in 2006.

Cooking Caused Almost 1/2 of Office & Bank Fires
Unattended cooking and other unsafe cooking practices caused 48% of the 199 fires in office buildings and banks in 2007. Heating equipment accounted for 19% of these fires. Electrical problems caused 7% of the office building fires. Indoor rubbish fires caused 5% of these fires. Arson and smoking each caused 4% of these fires. Candles and

juvenile-set fires were each the cause of 1% of the fires in Massachusetts' office buildings and banks in 2007.

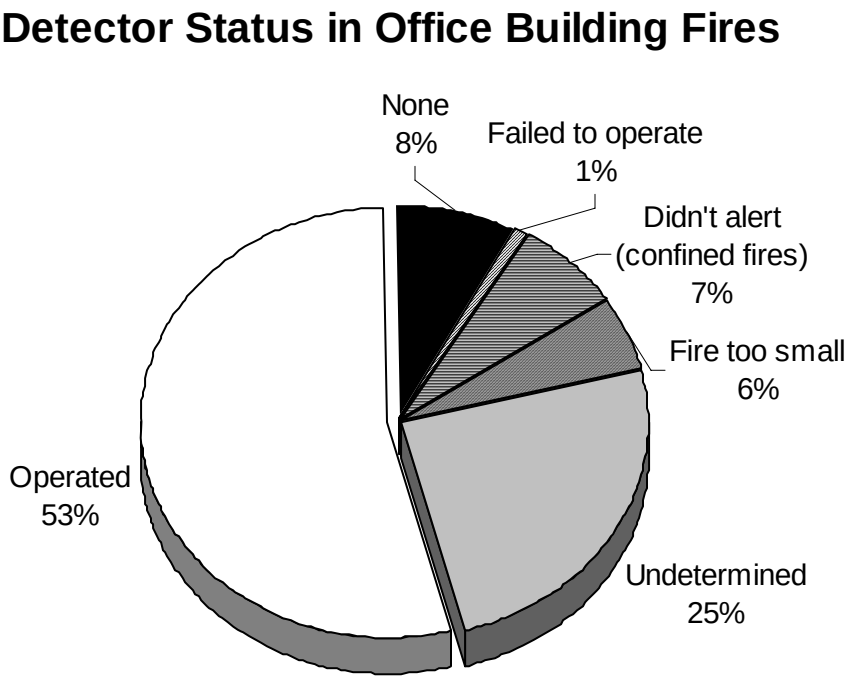


Almost 1/2 Office Building and Bank Fires Started in Kitchen
Forty-eight percent (48%) of the fires in office buildings or banks started in the kitchen. Sixteen percent (16%) of these fires began in a heating room or area. Four percent (4%) originated in an office. Two percent (2%) started on an exposed exterior surface.

70% of Office Building Fires Are Confined to Non-Combustible Containers[38]
One hundred and thirty-nine (139), or 70%, of all office building and bank building fires were reported as confined to non-combustible containers in 2007. Ninety-three (93) of the reported fires were cooking fires contained to a non-combustible container accounting for 47% of office building fires. Thirty (30), or 15%, were fires confined to a fuel burner or boiler malfunction. Twelve (12), or 13%, of these fires were contained indoor rubbish fires[39]. Two (2) of these fires were confined to chimneys or flues accounting for 1%; and another two fires were confined to the commercial compactor, also accounting for 1% of the fires in office buildings and banks. Confined fires in offices decreased by one incident, or 1%, from the 140 reported in 2006.

[38] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.
[39] Confined rubbish fires in office buildings increased by 18, or 225%, from the 8 reported in 2005.

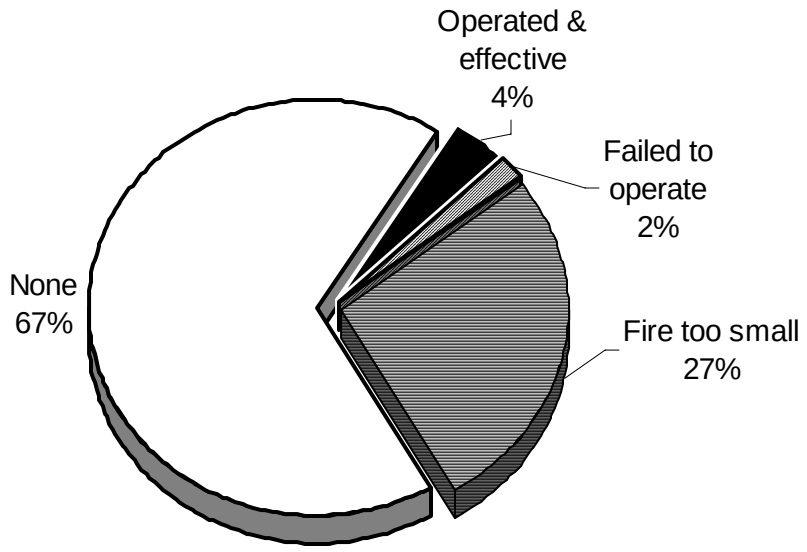
Detectors Operated in Over 1/2 of Fires
Smoke or heat detectors operated and alerted the occupants in 107, or 53%, of the office building fires in 2007. In 7% of these fires[40], the detectors did not alert the occupants. In 8% of these fires, no detectors were present at all. In 1% of these fires the detectors failed to operate. The fire was too small to trigger the detector in 6% of the office building fires. Smoke detector performance was undetermined in 49 incidents, or 25% of the fires in Massachusetts' office buildings.



2/3 of Office Building and Banks Had No AES
No automatic extinguishing systems (AES) were installed in 35, or 67%, of the 52 fires occurring in office buildings and banks where AES performance was known. Systems were present and operated effectively in two, or 4%, of these incidents. The system failed to operate in one, or 2%, of office building fires. The fire was too small to activate the system in 14, or 27%, of these incidents. AES performance was not known in 13 of the total number of office building and bank fires. These incidents were excluded from the analysis.

[40] These represent confined fires where it was reported that the detector did not alert the occupants.

AES Status in Office Building & Bank Fires



Electrical Fire Caused Largest Loss Office Building Fire

- On March 18, 2007 at 8:49 p.m., the Brockton Fire Department was called to an electrical fire in a one-story office building. Arcing wires in an office started the fire. There were no detectors present and the building did not have any sprinklers however no one was injured at this fire. Damages from this fire were estimated to be $475,000.

Vacant Building Fires

390 Fires Caused 1 Fire Service Death & 68 Fire Service Injuries

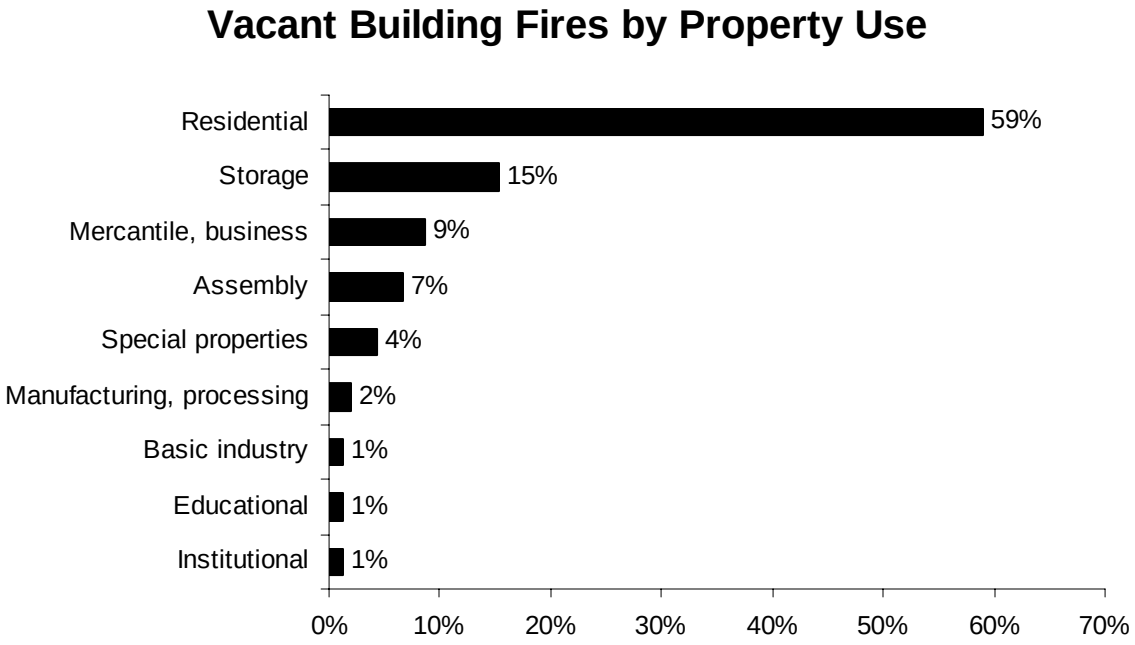
Three hundred and ninety (390) building fires occurred in buildings that were vacant, under construction or demolition[41]. These 390 fires caused one fire service death, two civilian injuries, 68 firefighter injuries and an estimated $36.7 million in damages. The average dollar loss per vacant building fire was $94,180. Fires in vacant buildings were up 13% from 345 in 2006.

[41] In version 4 a vacant building was defined by having a Fixed Property Use code in the subsection of construction, unoccupied properties, between 910 & 919. However in version 5, the Property Use is separate from the Building Status. In v5 a building is considered vacant if the Building Status is coded: 1-Under Construction; 3-Idle, not routinely used; 4-Under major renovation; 5-Vacant, secured; 6-Vacant, unsecured; & 7-Being demolished. The building use is coded separately in the Property Use field.

15% of Vacant Building Fires Considered Arson
Fifty-seven (57), or 15%, of the fires in vacant buildings were considered arson. These 57 fires caused eight firefighter injuries and $7.6 million in damages. In 2007, 17% of the total 344 Massachusetts building arson fires occurred in vacant buildings.

44% of Vacant Building Fires Undetermined
Forty-four percent (44%) of vacant building fires were undetermined. Forty-eight (48), or 12%, of the 390 vacant building fires were undetermined after investigation. One hundred and seventeen (117), or 30%, were coded as still under investigation; and two, or 2%, were classified as 'Other'.

59% of All Vacant Building Fires Were Residential
Out of the 390 vacant building fires, 230, or 59%, occurred in residential occupancies. This is an increase of 50, or 28%, over the 180 that were reported in 2006. Sixty (60), or 15%, happened in storage facilities; 34, or 9%, happened at mercantile or business locations; 26, or 7%, were in public assembly properties; 17, or 4% occurred in special properties; eight, or 2%, happened at manufacturing or processing locations; five, or 1%, were at educational facilities; five, or less than 1%, occurred at basic industrial sites; and five, or 1% of vacant building fires, occurred at institutional facilities.



Over 1/2 of All Vacant Building Arsons Occurred in Residential Buildings
Over one-half, or 51%, of the vacant building arsons in 2007 occurred in residential occupancies. Nineteen percent (19%) took place in storage facilities; 9% occurred in mercantile or business properties; 7% happened in public assembly properties; 5% happened in manufacturing or processing facilities; 4% happened at educational facilities; another 4% happened at special properties; and 2% occurred in basic industrial facilities.

The following table and chart illustrate the trend in vacant building fires and arsons over the past decade. These fires steadily declined from 113 in 1996 to 73 in 2000. 2001 was the transition year to version 5, and its increased ability to track these fires and was also the year when the cause 'suspicious' was eliminated from our definition of arson. It should be noted that prior to 2004, these statistics did not include data from the Boston Fire Department. Data from the BFIRS system lost the capability to identify vacant buildings during conversion to MFIRS. This problem was eliminated when Boston completed its conversion to MFIRS version 5 in 2004. Therefore, the numbers in the table prior to 2004 should be considered to be underestimated.

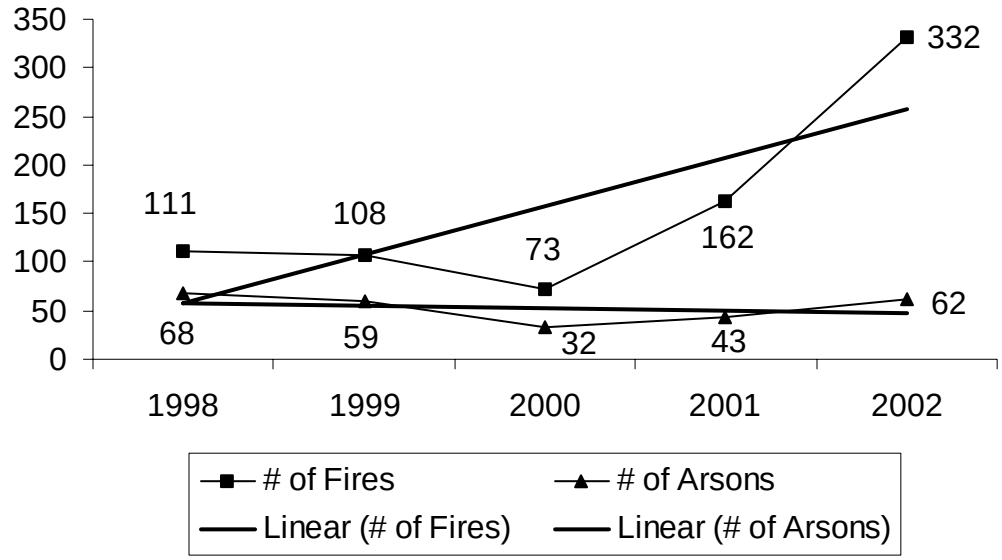
FIRES AND ARSONS IN VACANT BUILDINGS

Year	# of Fires	# of Arsons	% Arsons
2007	390	57	15%
2006	345	53	15%
2005	369	62	17%
2004	387	67	17%
2003	353	50	14%
2002[42]	332	62	17%
2001	162	43	27%
2000	73	32	44%
1999	108	59	55%
1998	111	68	61%
1997	106	64	60%

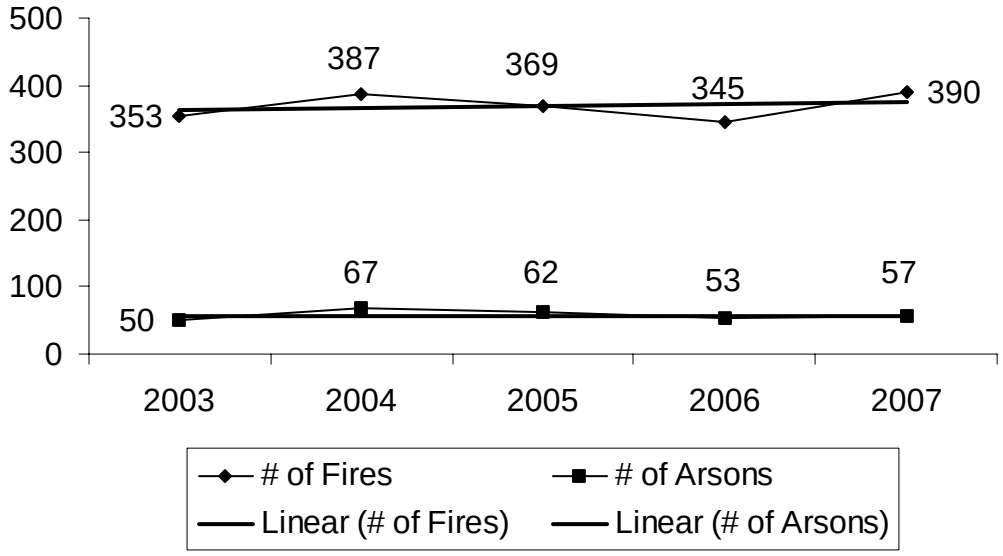
The following graphs clearly show this downward trend in both vacant building fires and vacant building arsons prior to 2001. From 2001 on, numbers are from the new version 5 format. The increase in both the number of vacant building fires and arsons in 2001 was expected because of version 5's ability to distinguish between a building's property use and its building status.

[42] The 2002 MFIRS Annual Report reported 487 fires in vacant buildings. This figure incorrectly included 83 building fires where the Building Status code was either 0 – Other or U – Undetermined. Without these 83 fires the total number of building fires in vacant buildings was 332 and arsons in vacant buildings was 62.

Vacant Building Fires & Arsons by Year 1998 - 2002



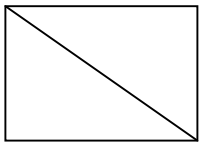
Vacant Building Fires & Arsons by Year 2003 - 2007



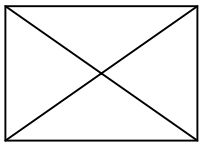
Communities Have Gone on the Offensive Against Vacant Buildings
Some communities have gone on the offensive against vacant buildings. The 32% drop in reported vacant building fires from 1999 to 2000 was likely due to the aftermath of the December 3, 1999 Worcester Cold Storage Warehouse Fire where six firefighters lost their lives. A homeless squatter couple that had been living in the abandoned Worcester Cold Storage Warehouse started the fire when a candle they were using was knocked over and ignited some of their clothes. This tragedy led to increased awareness of the dangers of abandoned and vacant buildings. This heightened awareness led to pre-incident planning including increased inspections, stricter adherence to building and fire codes along with tighter security around these buildings, more frequent patrols of areas where these buildings are located, tougher fines for owners who fail to keep vacant buildings secured, and the taking of these properties by the municipality through a variety of means. It also led to many changes in firefighting practices in these types of fires such as deciding whether to use an offensive attack strategy placing firefighters inside the building, or a defensive strategy by setting up master stream devices and fighting the fire from the outside.

The City of Worcester took the lead. Since the tragic death of six of its own firefighters, the city has marked vacant buildings with large placards for firefighters and other public safety personnel. These placards identify vacant buildings and either warn personnel to proceed with extreme caution when entering these buildings or that the building is off limits and a defensive, exterior attack is recommended.

These standards are now mandatory throughout the Commonwealth. Under both the Building Code (780 CMR 121.7 & 8) and the Fire Code (527 CMR 10.13 (7)), vacant buildings must be secured and marked with the following symbols.



Interior hazards exist. Interior operations should be conducted with extreme caution.



Interior and/or exterior hazards exist. Consideration should be given to conduct operations from the exterior only.

These placards can now be seen in communities throughout the Commonwealth. Neither of these symbols limit the incident commander in directing the operations he deems necessary.

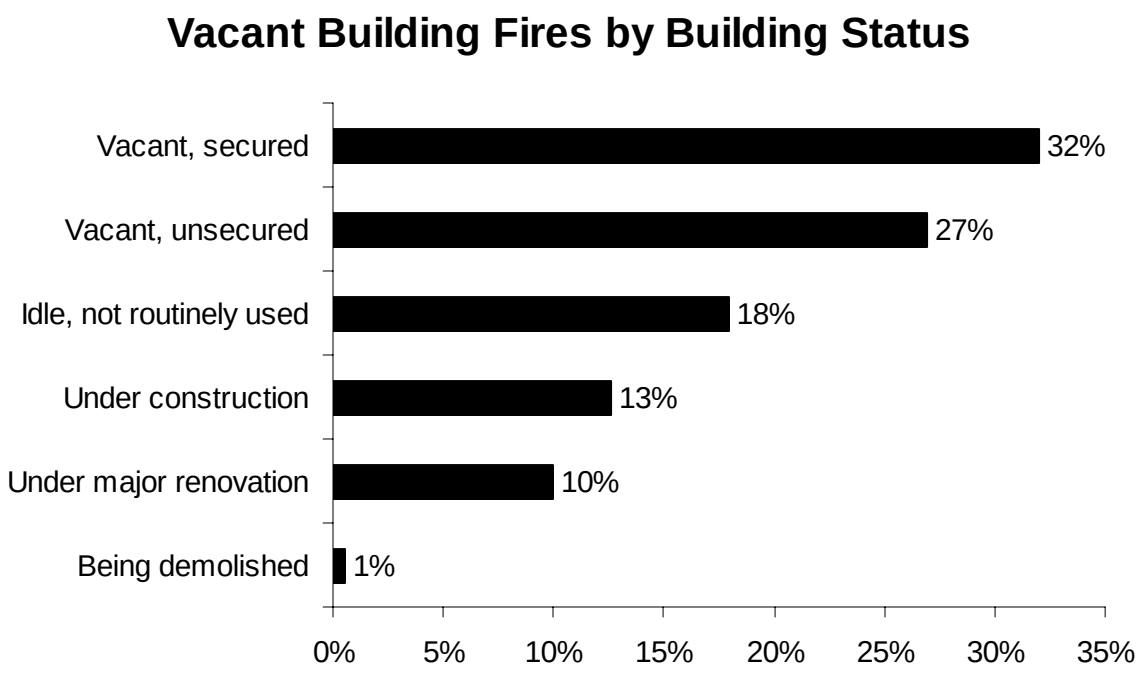
Vacant Buildings Also Threaten Community
Vacant buildings also pose a serious threat to the surrounding community. They become targets for vandalism. Children may find them attractive play spaces. Drug users or dealers may utilize the space for their activities. The homeless may seek shelter and set fires to keep warm. Arsonists who enjoy fires may consider these buildings to be

available for their use and entertainment. All of these activities threaten the safety of the neighborhood and surrounding homes.

A more recent development in vacant buildings is urban mining. Urban mining is when someone scavenges the metal wiring and plumbing in a building and sells it for scrap. In some instances the thieves do not know what they are cutting or disconnecting and my start a fire. In many ways vacant building fires "tax" the finances of the municipalities where they are located.

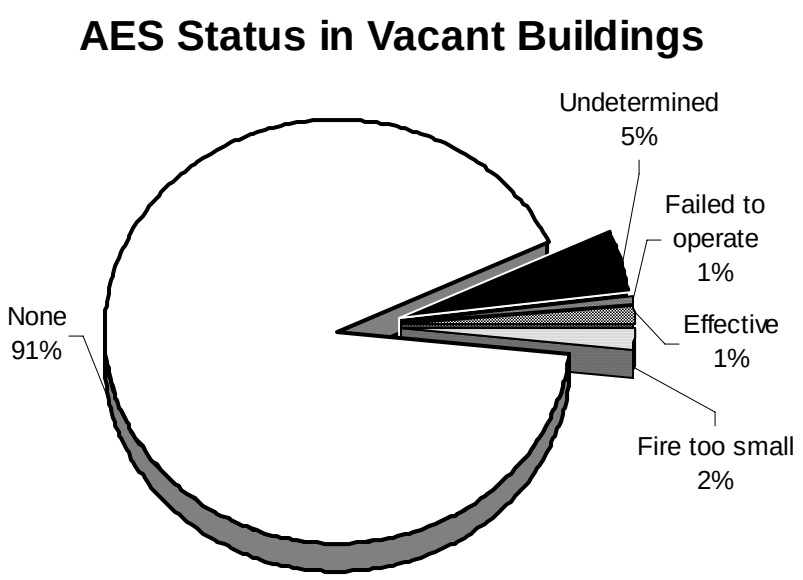
Effective Boarding Up Is Key To Protection
Removing furniture, contents and debris from the interior of the building, building officials insisting that all openings to the building are securely boarded up, preferably from the inside, and periodic security checks can reduce the risk of fire in any vacant building and the inherent risk to firefighters called to fight a vacant building fire. Local officials and building owners must ensure that these buildings are adequately secured to prevent entry into these buildings. This is a community's first line of defense in the battle to prevent arson and to maintain housing stock.

Almost 1/3 Were Vacant and Secured Buildings
Of the 390 fires in vacant buildings in 2007, 125, or 32% were in vacant buildings that were secured. Sixty-six (66), or 27% of these fires occurred in vacant buildings that were unsecured; 70, or 18% of these fires took place in buildings that were idle or not routinely used; 49, or 13% were under construction; 39, or 10%, happened in buildings undergoing major renovations; and two, or 1%, of the fires in these buildings occurred in buildings that were in the process of being demolished.



Almost 1/2 of All Vacant Building Arsons Occurred in Unsecured Buildings
Twenty-seven (27), or 47% of all vacant building arsons in 2007, occurred in unsecured vacant buildings. Fifteen (15), or 26% of these arsons occurred to vacant and secured buildings. Two (2), or 13% of the arsons involving vacant and secured buildings reported having the fire start on the exterior of the building. Nine (9), or 16%, occurred in idle buildings that are not routinely used. Buildings under construction accounted for 7% of vacant building arsons, or four of these incidents. Buildings under major renovation accounted for two, or 4% of the vacant building arsons in 2007.

91% Vacant Buildings Had No AES
No automatic extinguishing systems (AES) were installed in 91% of the 388 fires occurring in vacant buildings where AES presence was known. In 2% of these incidents, the fire was too small to activate the system. The AES failed to operate in 1% of these incidents. Systems were present and operated effectively in 1%, of these incidents. AES performance was not known in 5% of the building fires in vacant buildings in 2007.



Sprinklers Must Be Maintained
When the sprinkler systems are present, they must be maintained. If the head of the fire department decides to grant a request under MGL Chapter 148, Section 27A to disconnect the system, extra precautions should be taken.

Firefighters Injured at 1 of Every 6 Vacant Building Fires
One of the most dangerous types of fires for firefighters in 2007 was vacant building fires. Vacant building fires accounted for 68, or 10%, of all firefighter injuries in 2007. These 68 injuries also represent 12% of the number of firefighter injuries at all building fires. On average there was one firefighter injury for every six vacant building fires.

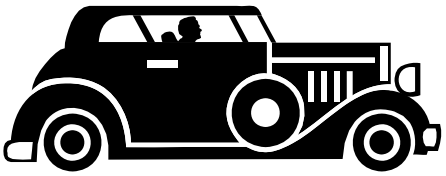
Large Loss Vacant Building Fires
In 2007, there were five vacant building fires that had an estimated dollar loss greater than $1 million. These five fires accounted for $21 million in estimated damages, or 57% of all vacant building dollar loss estimates in 2007. In 2006 there was only one vacant building fire that met this criteria.

- On April 7, 2007, at 1:53 a.m., the Danvers Fire Department was called to a fire in a four-story, apartment building of undetermined cause. The apartment building was on the site of the former Danvers State Hospital and was under construction at the time of the fire. No one was injured at this fire. Smoke detectors had not been installed yet in the building. A partial sprinkler system was present, but it was undetermined if it operated. Damages from this fire were estimated to be $11 million.

- On September 27, 2007, at 12:04 a.m., the East Longmeadow Fire Department was called to an arson fire in a three-story assisted living building. The apartment building was under construction. One firefighter broke his ankle at this fire. Smoke detectors had not been installed yet in the building. Sprinklers were also not installed in the building. Damages from this fire were estimated to be $6.1 million.

Motor Vehicle Fires

3,317 Motor Vehicle Fires Account for 10% of All Reported Fires
Motor vehicle fires accounted for 10% of total reported fire incidents. The 3,317 motor vehicle fires in 2007 are a 1% increase from the 3,270 motor vehicle fires in 2006. They caused 10, or 16%, of civilian fire deaths, 20 civilian injuries, 21 fire service injuries, and an estimated property damage of $14.8 million.



According to MFIRS, a motor vehicle fire is defined as any fire involving a car, truck, boat, airplane, construction equipment or other mobile property (not being used as a permanent structure) that occurs outside of a structure.

20 Years of the Burned Motor Vehicle Reporting Law
The Massachusetts Fire Incident Reporting System identified motor vehicle fires and motor vehicle arson as a major problem in 1985. The Burned Motor Vehicle Reporting Law took effect in August of 1987, 20 years ago. The law requires owners of burned motor vehicles to complete and sign a report that must also be signed by a fire official from the department in the community where the fire occurred. This law has been effective in reducing motor vehicle fires overall and vehicle arsons in particular. Since it took effect in 1987, motor vehicle arsons have decreased 97% from a high of 5,116 in

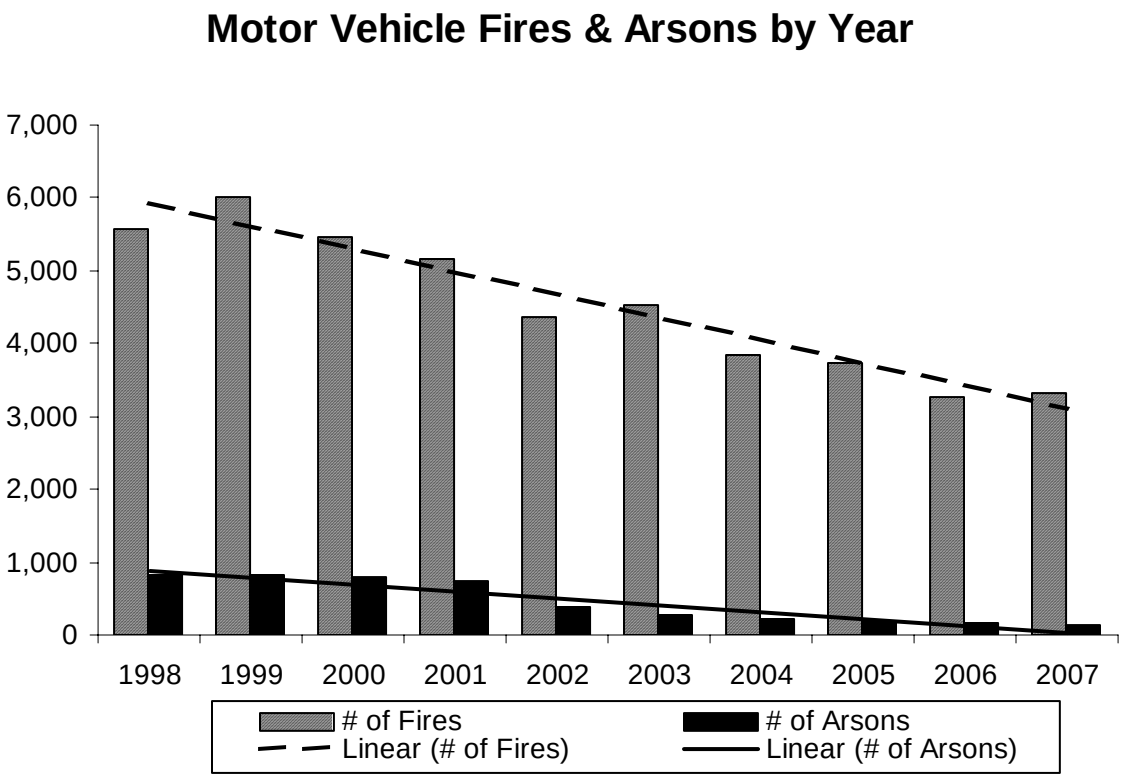
1987 to 130 in 2007. The percentage of motor vehicle fires that are arsons has also dropped 74% in the past decade from 15.0% in 1998 to 3.9% in 2007.

The table below shows the number of vehicle fires and vehicle arsons and the percentage of vehicle fires caused by arson for the past decade.

VEHICLE FIRES AND VEHICLE ARSONS BY YEAR

Year	Vehicle Fires	Vehicle Arsons	% Arsons
2007	3,317	130	3.9%
2006	3,270	159	4.9%
2005	3,717	184	5.0%
2004	3,825	227	5.9%
2003	4,533	280	6.2%
2002[43]	4,331	395	9.1%
2001	5,127	743	14.5%
2000	5,473	798	14.6%
1999	6,011	818	13.6%
1998	5,565	836	15.0%

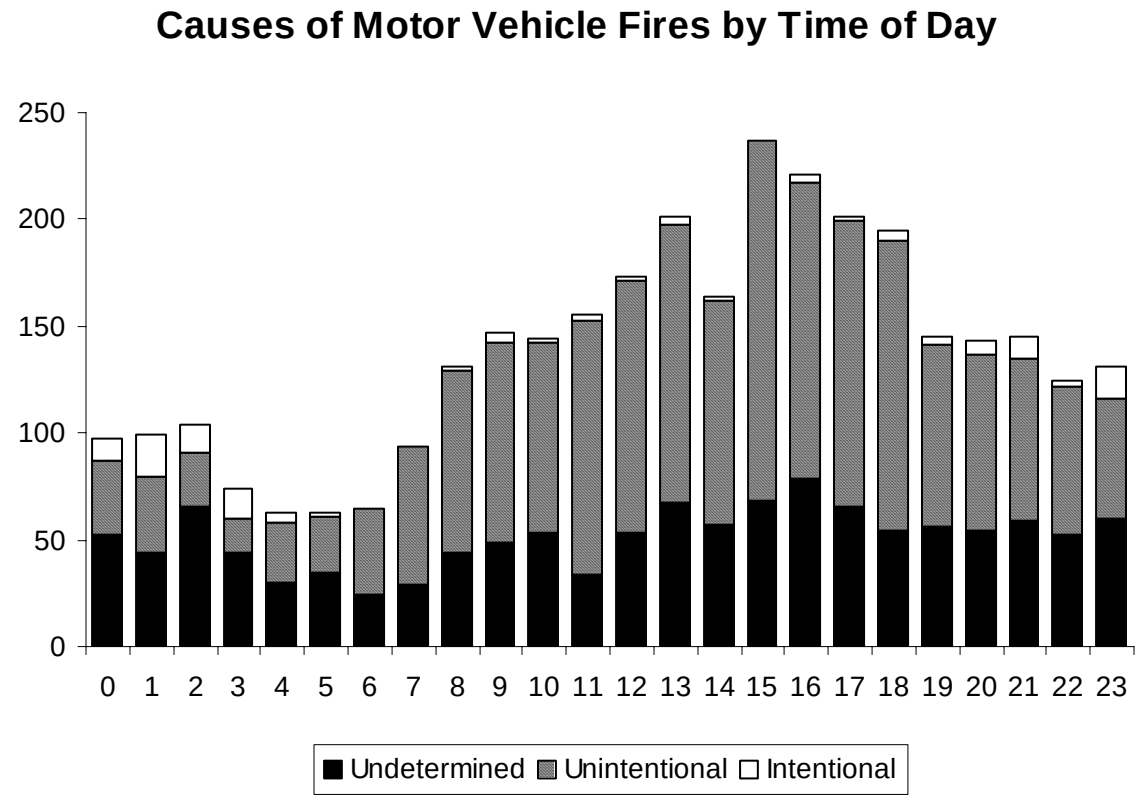
The following graph illustrates the data in the previous table.



[43] 2002 was the first full year of using only V5 data. As a result, 'Suspicious' was eliminated as a cause and only 'Intentional' fires were counted as arson, thus the significant drop in MV arsons from 2001-2002.

Mechanical Failures Caused 24% of Massachusetts Motor Vehicle Fires
Of the 3,317 motor vehicle fires in 2007, 24% were caused by some type of mechanical failure or malfunction; 4% were considered intentionally set and 35% resulted from other accidental causes. The cause was undetermined or not reported in 37% of the motor vehicle fires.

Unintentional Fires Occur During Day and Early Evening
Motor vehicle fires of different causes occur at different times of the day. As the following graph shows, accidental or unintentional fires are more common during the day and early evening. Incendiary fires are generally set in darkness. The graph below shows fire frequency by time of day on the 24-hour clock for the causes of motor vehicle fires. Midnight to 1:00 a.m. is represented by 0, 1:00 a.m. to 2:00 a.m. is represented by 1, etc.



59% of Massachusetts Motor Vehicle Fires Involved Automobiles
Automobiles and vans accounted for 59% of the 3,317 motor vehicle fires, 1% were trucks weighing less than one ton and 4% were trucks weighing more than one ton.

Car Fire Safety Tips
Regular maintenance is the best way to prevent car fires. Leaking gasoline, oil and hydraulic fluids can catch fire. Electrical problems can cause short circuits and heat build-up. A properly operating catalytic converter can reach 1,100° F. It can get even hotter if the car has worked hard or needs a tune-up. If other parts come in contact with it, they can ignite. Catalytic converters on parked cars will sometimes ignite a pile of leaves or dried grass underneath.

What Should You Do if You Have a Car Fire?

1. Pull over to the side of the road and stop as soon as possible. For automobiles with an automatic transmission put the vehicle in Park; or for cars with a manual transmission, set the parking brake and put it in gear. Fire can disable a car's electrical system in seconds. Power steering and brakes can be harder to use than normal.
2. Turn off the ignition. You want to make sure no more gasoline is pumped to the fire.
3. Get everyone out of the car.
4. Move away and call 911. Do not open the hood or trunk. You risk injury, and give the fire more oxygen.

Unless you're trained, let firefighters handle it. They wear protective clothing and are trained to handle pressurized systems, exploding bumpers, etc. Chemicals in the fire extinguisher can be compacted. To be effective, they must be used correctly. You don't want to practice in a panic situation.

Gasoline Deserves Respect

There were 45 motor vehicle fires at gas and service stations in 2007. There were 42 motor vehicle fires at facilities used for motor vehicle or boat sales, service or repairs. Many of these fires were started by gasoline or the gasoline fumes. Gasoline is so much a part of our lives that we don't think about it. However, it is a very dangerous substance and certain measures should be taken to minimize the chances of an incident.

Gas Station Safety

- Turn off your car when you get gas.
- At self-service stations, remember to put the nozzle back and your gas cap on before driving off. Monitor the fueling; do not get back in the vehicle.
- Gasoline vapors burn at a very low temperature. These fumes are heavier than air, and can travel a distance to find a spark. Keep anything that could provide heat to start a fire away from gasoline. A spark or a lit cigarette is enough to ignite the invisible fumes that may linger on clothing.
- If you need to carry or store gasoline, use an approved container.
- When filling an approved container, place it on the ground to prevent static electricity build–up which could ignite the gasoline vapors. Make sure that the nozzle is always in contact with the container when filling.
- Make sure the approved container is in a secured, upright position away from passenger areas, and that the fill and vent openings are tightly closed. At home, always store these containers in safe secure areas – outside of living areas – away from ignition sources such as pilot lights.

Outside and Other Fires

13,483 Brush, Trash, and Other Outside Fires Reported in 2007

The 13,483 outside and other fires and explosions caused four civilian deaths, 42 civilian injuries, 90 fire service injuries, and an estimated dollar loss of $4.1 million. The 6,602 trees, grass and brush fires, 3,823 outside trash fires, 1,058 special outside fires, 91 cultivated vegetation or crop fires, and 1,909 other fires accounted for 45% of the total fire incidents in 2007. These fires were up 18% from the 11,447 incidents reported in 2006. Fire departments are required to report any fire or explosion resulting in a dollar loss or human casualty to MFIRS. Fires that do not result in a loss may be reported. Many fire departments, particularly those that submit data electronically, voluntarily report these fires. These figures should be considered an underestimate of the "no-loss" fire incidents to which fire departments actually responded.

The 13,483 reported outside and other fires include:

- 6,602 natural vegetation fires (trees, grass, and brush fires) that caused one civilian death, six civilian injuries, 51 firefighter injuries, and an estimated dollar loss of $305,002; this is a 41% increase from the 4,686 incidents reported in 2006;
- 3,823 trash fires that caused seven civilian injuries, 20 fire service injuries and an estimated dollar loss of $94,002; this is a 2% increase from the 3,736 incidents reported in 2006;
- 1,058 special outside fires (including outside, storage, equipment, mailbox fires and outside gas or vapor explosions) that caused three civilian deaths, seven civilian injuries, six fire service injuries and an estimated dollar loss of $485,583; this is a 28% increase from the 825 incidents reported in 2006;
- 91 cultivated vegetation or crop fires which caused one fire service injury and an estimated dollar loss of $1,001; this is a 107% increase from the 44 incidents reported in 2006;
- 1,909 other fires that could not be classified further which caused 22 civilian injuries, 12 fire service injuries, and an estimated dollar loss of $3.2 million; this is an 11% decrease from the 2,156 incidents reported in 2006.

Large Loss Outside and Other Fires

♦ On March 15, 2007 at 1:30 p.m. the Plymouth Fire Department was called to a fire at an industrial plant yard. First arriving firefighters discovered heavy fire from a diked containment area within the asphalt plant yard. Combustible fluids including a vented flammable gas line were on fire. Damages from this fire were estimated to be $250,000.

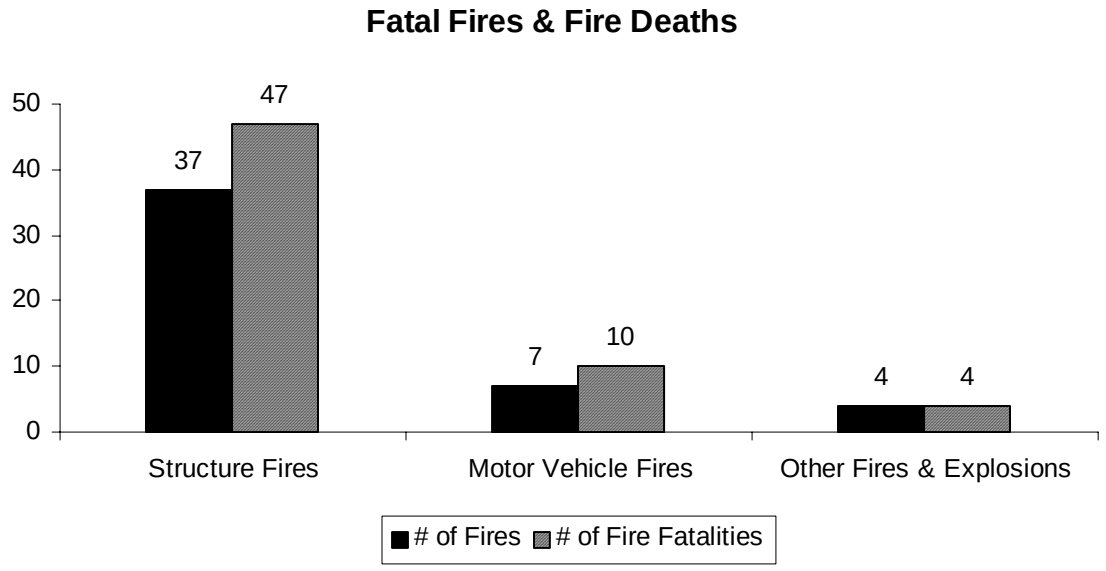
For a listing of all the Outside and Other fire deaths in 2007, please refer to the *2007 Massachuestts Fire Deaths* section of this report.

2007 Massachusetts Fire Deaths

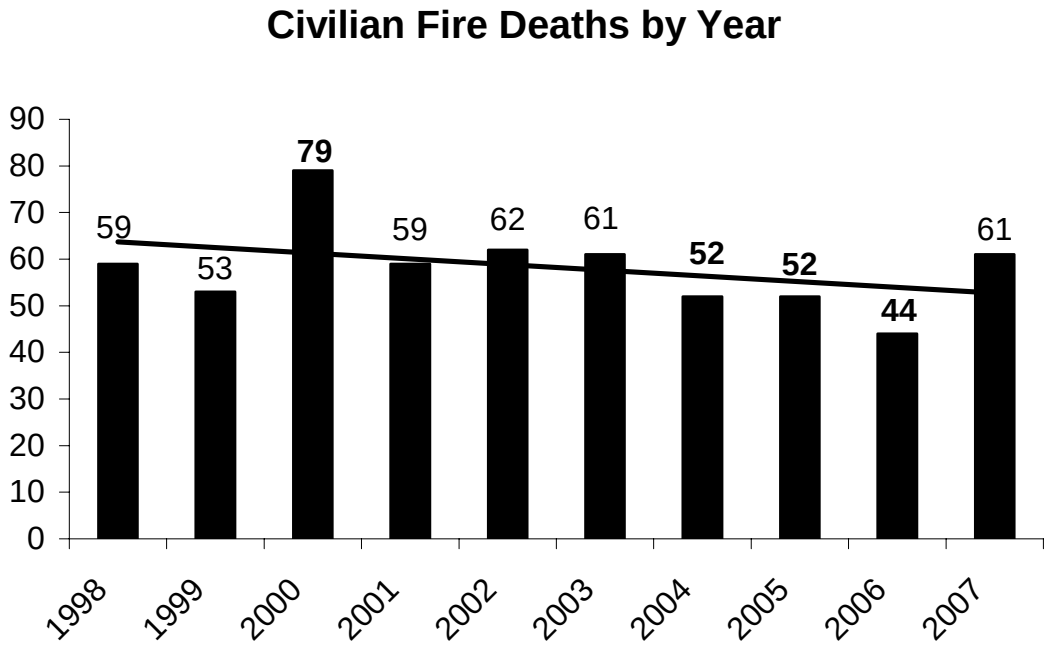
Civilian Fire Deaths

61 Civilians Died in Massachusetts Fires – 39% Increase from All-Time Record Low
Sixty-one (61) civilians died in 48 Massachusetts fires during 2007. This is a 39% increase from the all-time record low of 44 civilian fire deaths recorded in 2006. Forty-seven (47) civilians died in 37 structure fires. Ten (10) people died in seven motor vehicle fires. Four (4) people died in four outside and other fires in 2007. In 2007, there were 9.6 fire deaths per one million population in Massachusetts up from 6.9 fire deaths per one million population in 2006.

The following graph shows the number of civilian fatal fires and the number of fire deaths in structure fires, motor vehicle fires and other fires and explosions.



Fire Deaths Increase 39% from All Time Low
The 61 civilian fire deaths reported in 2007, is an increase of 17, or 39%, from the 44 reported in 2006. The following chart shows the trend of civilian fire deaths for the past decade on a general decline. Civilian fire deaths have decreased by 42% from the high of 105 in 1990.

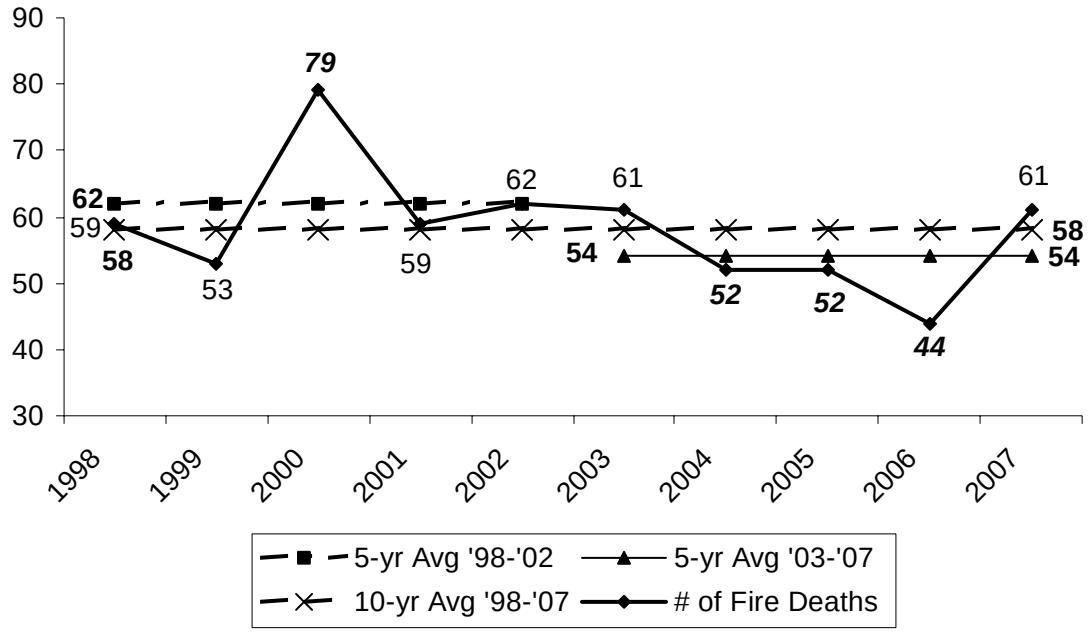


2007 Is Above Both the 10- & 5-Year Averages

Because the number of fire deaths fluctuates from year to year and may be influenced by uncontrollable outside factors such as high energy costs for heating, it is helpful to look at averages over five and 10-year periods. The following graph illustrates the number of fire deaths for the past 10 years in relation to the five-year average for fire deaths for the periods from 1998 through 2002 and from 2003 through 2007. The average number of fire deaths per year from 1998 through 2002 was 62 deaths. The average number of fire deaths per year from 2003 through 2007 was 54 deaths. This was mainly due to three years of record low fire deaths from 2004 through 2006. The graph also depicts the relationship of the number of fire deaths in relation to the 10-year average of 58 deaths for the same time period. Three of the last four years have been below both the 10-year and the five-year averages.

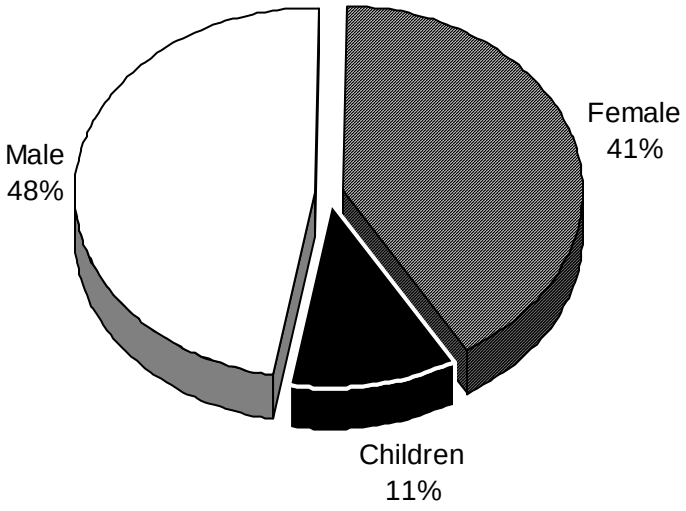
Note that the following chart starts at 30 rather than the traditional zero value. This is so the reader can concentrate on the sometimes subtle changes in the figures. The 61 fire deaths in 2007 are 13% above the five-year average and 5% above the 10-year average.

Civilian Fire Deaths by Year

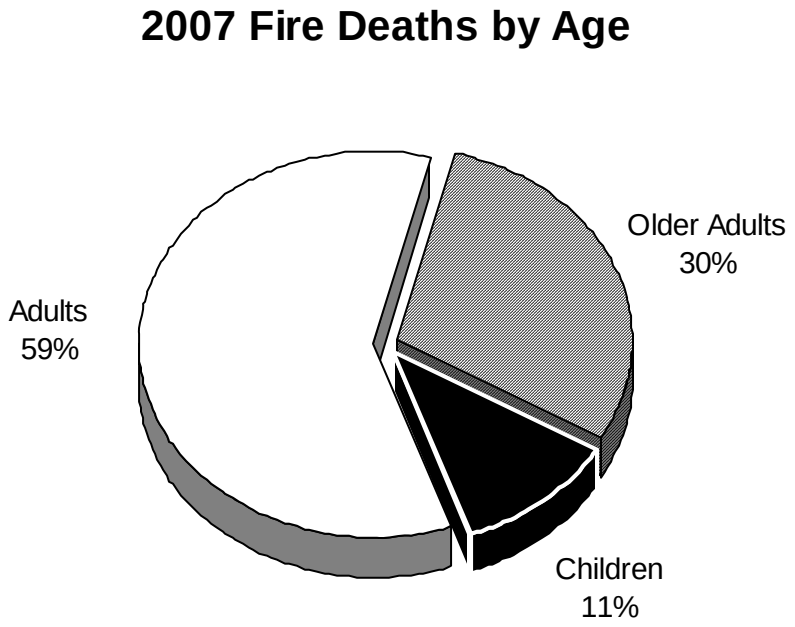


29 Men, 25 Women and 7 Children under 18 Died from Fires in 2007
Of the 61 fire deaths, 29 or 48%, were men, 25, or 41%, were women and seven, or 11%, were children under 18. The following pie chart illustrates the above figures.

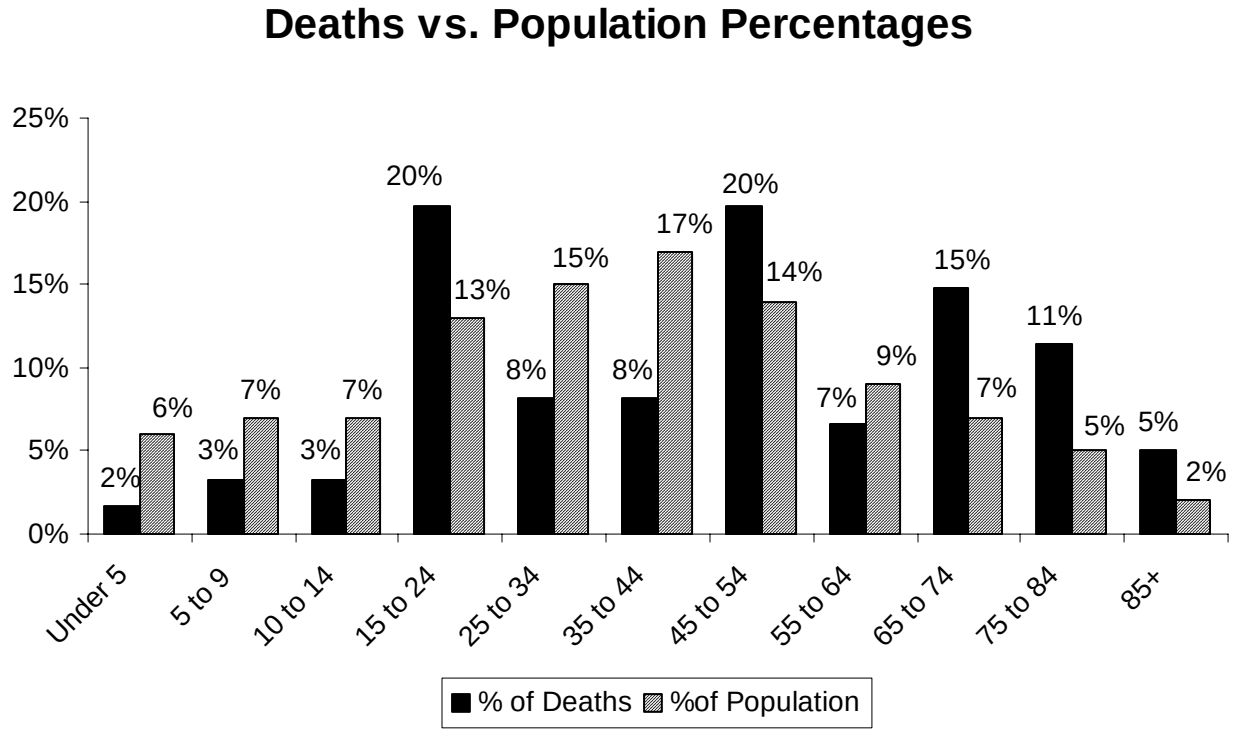
2007 Fire Deaths by Gender



Almost 1/3 of Fire Deaths were Over 65
Eighteen (18), or 30%, of the civilian fatal fire victims were over 65 years of age. This included nine elderly men and nine elderly women. Seven (7), or 11%, of the civilian fatal fire victims were under 18-years old. Thirty-six (36), or 59%, were adults between 18 and 65 years of age. The following pie chart illustrates the above figures.



Older Adults at Great Risk for Fire Death
Older adults, especially those between the ages of 65 and 74 had the greatest risk of dying in a fire. Older adults, those over the age of 65, account for 14% of the population but 30% of the fire deaths. The risk of fire death for older adults is 2.2, the same as in 2006 and up slightly from 2.1 in 2005. This means that older adults were twice as likely to be fire-related fatalities. The following graph shows the percentage of fire deaths versus population percentage by age groups in 2007.



How to Read the Preceding Chart
If an age group represents 10% of the population, we expect it to account for 10% of the fire deaths. If it accounts for a higher percentage of fire deaths than it does for the overall population, that group is at a higher risk of dying in a fire. If the age group accounts for a lower percentage of fire deaths than it does for the overall population, then that group is at a lower risk of dying in a fire.

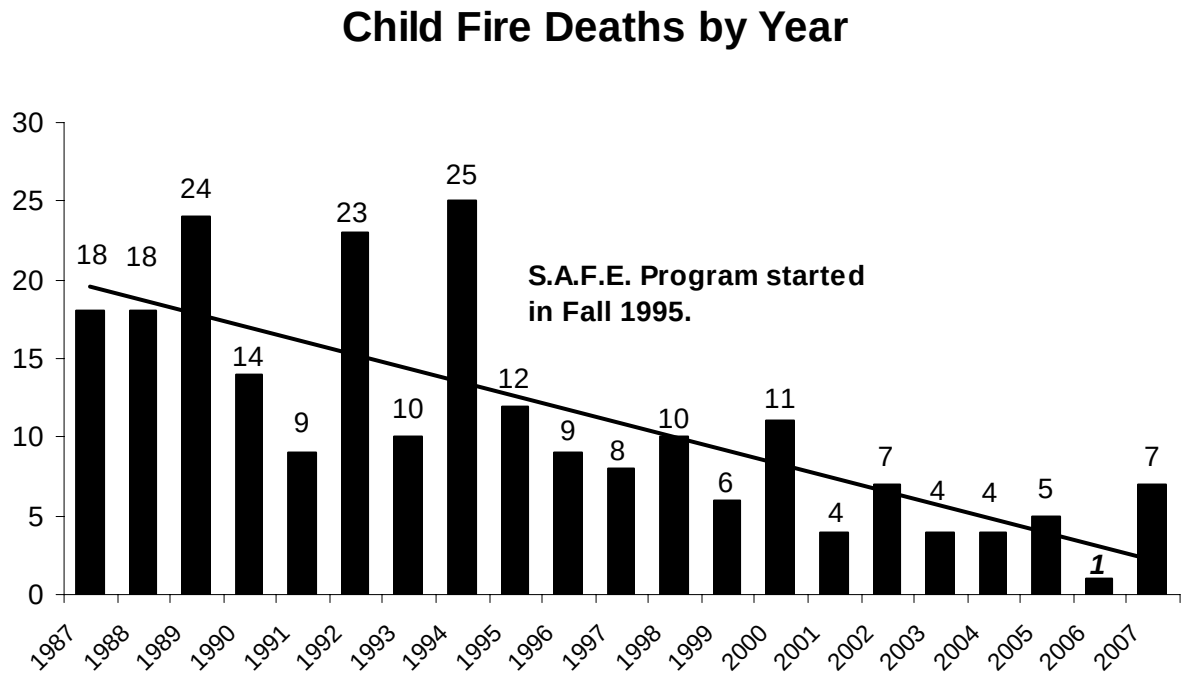
The percentages of the population in each age group were calculated using data from the 2000 Census from the U.S. Census Bureau.

Children Under 5 Had the Lowest Risk of Fire Deaths
Children under the age of five had the lowest risk of dying in a fire. Children under five years old accounted for 6% of the population and 2% of fire deaths in 2007. Children between the ages of five and nine accounted for 7% of the population and 3% of the civilian fire deaths; children between the ages of 10 and 14 accounted for 3% of the deaths and 7% of the population; young adults ages 15 to 24 accounted for 20% of the fire deaths and 13% of the population; people ages 25 to 34 accounted for 8% of the fire deaths and 15% of the population; adults between the ages of 35 and 44 were 8% of the fire fatalities and account for 17% of the population; people ages 45 to 54 accounted for 20% fatal fire victims and 14% of the Massachusetts population; victims between the ages of 55 to 64 accounted for 7% of the fatal fire deaths and 9% of the population; and older adults over the age of 65 accounted for 30% of the fire fatalities in Massachusetts in 2007, but only 14% of the population. Older adults over the age of 85 had the greatest

risk of dying in a fire; they accounted for 5% of the fire deaths in 2007, and only 2% of the population, making them 2.5 times more likely to die in a fire.

Children Now at Lower Risk of Dying in Fires in the Commonwealth
Contrary to national trends, children are no longer at a disproportionate risk of dying in fires in Massachusetts. The following graph illustrates the number of child (age >18) fire fatalities in Massachusetts from 1986 through 2007. You can see a definite downward trend in the number of fire related deaths to children from a high of 25 in 1994 to a low of one in 2006. According to United States Fire Administration statistics, children under 10 accounted for an estimated 22% of all fire-related deaths nationally from 1994 – 1998.[44] In 2007, children under 10 accounted for 5% of all Massachusetts fire-related deaths.

Child Fire Deaths Drop 42% Since Start of S.A.F.E. Program
Fire deaths of children under age 18 have fallen 42% since the start of the S.A.F.E. Program in the fall of 1995.

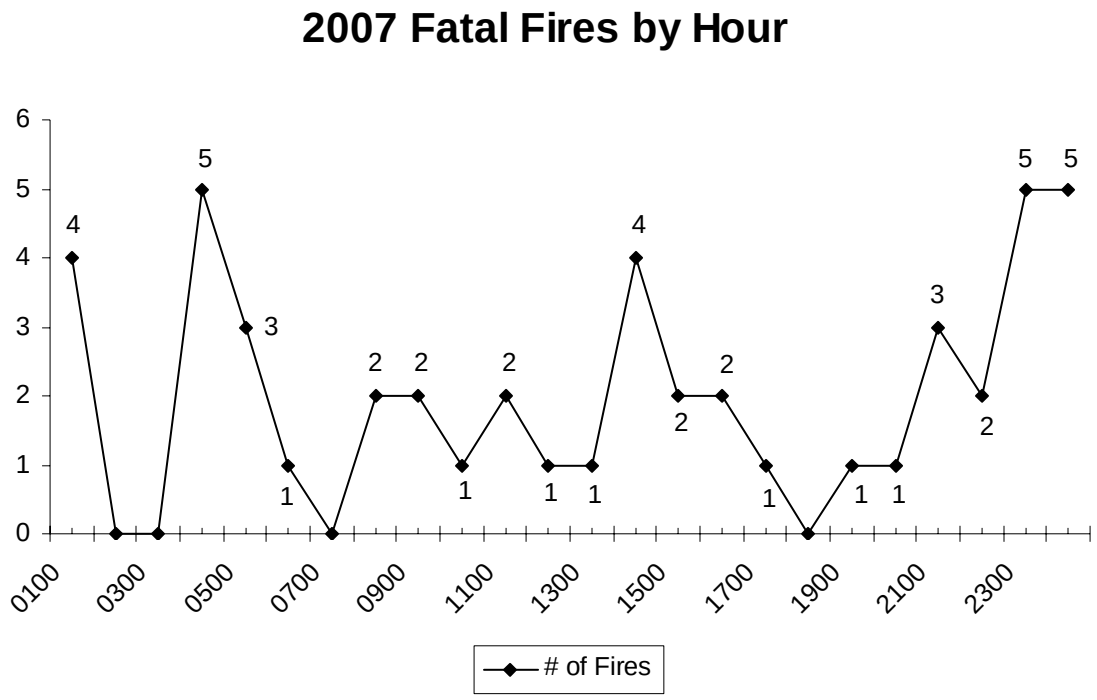


Since fire death numbers fluctuate quite a bit from year, it is helpful to look both at the trendline in the graph below and at averages over several years. During the 12 full years where the S.A.F.E. Program has been in effect, from 1996 to 2007, the average number of child fire deaths per year has been 6.3. In the 12 years prior to the S.A.F.E. Program, 1983-1994, the average number of child fire deaths per year was 18.7. This 66% drop in the average number of child fire deaths is significant when compared to the 37% drop in the average number of all fire deaths during the same time period.

[44] Source: United States Fire Administration's **Facts on Fire: Fire in the United States.**

The one thing that is happening in Massachusetts to improve fire safety exclusively for this age group, that is not also happening to all other age groups, is consistent, comprehensive, statewide, school-based fire safety education.

Just Over 1/2 of People Died in Fires While They Slept
Just over half of the people who died in fires that occurred while they slept. Thirty-two (32), or 52%, of the fire victims died in fires that occurred between 10:00 p.m. and 7:00 a.m. The following graph shows the fire death frequency by time of day on the 24-hour clock. Midnight to 1:00 a.m. is represented by 0100; 1:01 a.m. to 2:00 a.m. is represented by 0200, etc.



The importance of having working smoke alarms is clearly demonstrated here. Because over one-half of the fire victims die during normal sleeping hours, the need to quickly awaken sleepers to the presence of danger is paramount.

Structure Fire Deaths

In 2007, there were 47 structure fire deaths in 37 fatal fires. Not all of the structure fire deaths occurred in residential occupancies. One fatal fire occurred in an electric generating plant, another in an office building, a third in a detached residential garage, and another in a shed.

Man Dies When Sparks from Grinder Ignite Clothes

- On February 26, 2007, at 3:08 p.m., the Mattapoisett Fire Department was called to a fatal fire in a detached residential garage. The fire self-extinguished, and the victim was the only thing that burned. The 72-year old male victim was using an electric metal grinder on a tractor's 3-pin towing hitch, and the sparks generated by the grinder ignited his flannel clothing. The victim received heavy burns to his lower extremities and less severe burns on the upper half of his body. There were no detectors or sprinklers present in the garage. No one else was injured in this fire, and damages were not estimated.

Murder-Suicide in Office Building Explosion & Fire

- On March 14, 2007, at 2:33 p.m., the Lynn Fire Department was called to a fatal explosion and ensuing fire in an office building. The victim, a 21-year old woman, was forced into an elevator by her 23-year old ex-boyfriend. Just before the elevator doors closed, the victim was able to push their 5-year old son out of the elevator to safety. The man ignited a can of gasoline inside the elevator killing them both. The 5-year old boy and another by-stander received injuries from the fire. Smoke detectors and sprinklers were present and operated effectively. No estimation was made as to the damages incurred by this fire.

Self-immolation in a Shed

- On June 14, 2007 at 4:26 p.m., the Swansea Fire Department was called to a fatal shed fire. The victim, a 49-year old man, went into the shed, poured gasoline on himself and ignited it. There were no detectors or sprinklers present in the shed. No estimation was made as to the damages incurred by this fire.

3 Workers Die in Steam Explosion at Electric Generating Plant

- On November 6, 2007, at 8:50 a.m., the Salem Fire Department was called to a fatal steam pipe explosion at an electric generating plant. The three male victims, ages 20, 41 and 56 were all employees of the plant. All three victims were transported to local hospitals where they died the next day. Detectors operated. No one else was injured in this explosion, and damages were not estimated.

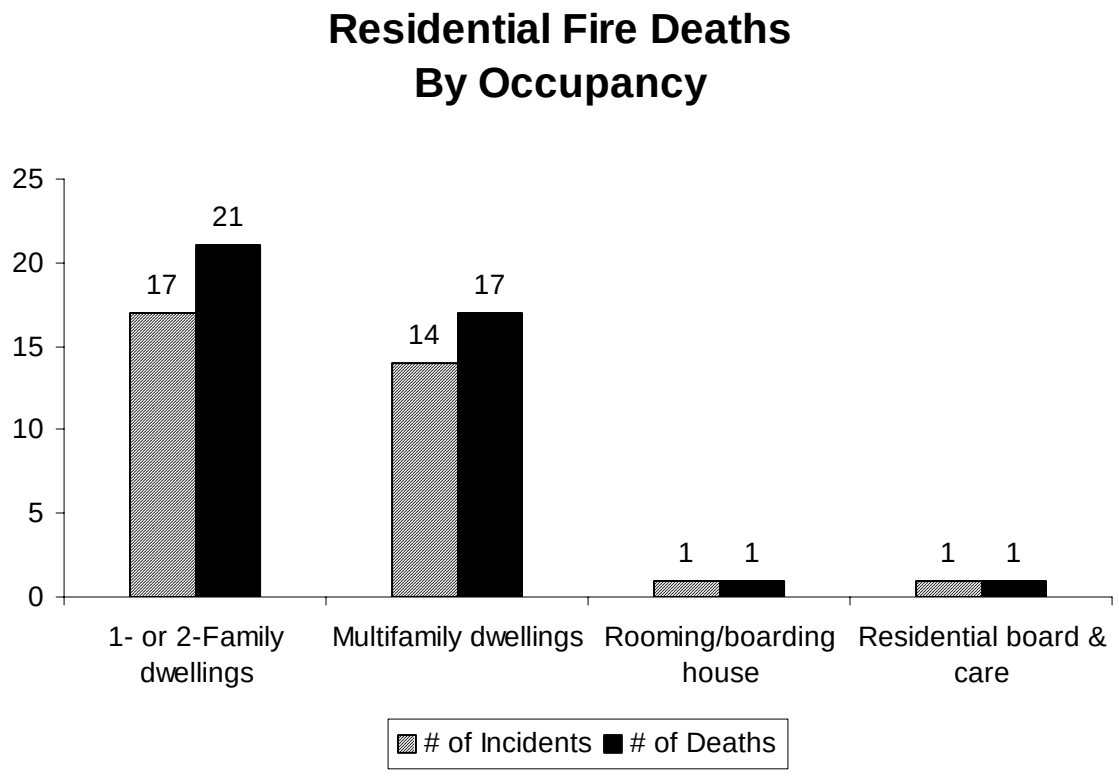
Residential Building Fire Deaths

Most Fire Deaths Occur in the Home

The majority of fire deaths occur in residential occupancies. We focus our analysis on these deaths because it is where prevention can yield the greatest results or have the most impact.

In 2007 there were 40 residential building fire deaths in 33 residential fatal fires. This represents 85% of the structure fire deaths and 66% of all fire deaths. Twenty-one (21) fire deaths occurred in 17 fires in one- and two-family dwellings; 17 fire deaths occurred in 14 apartment fires; one fire death occurred in a rooming house fire; and one death

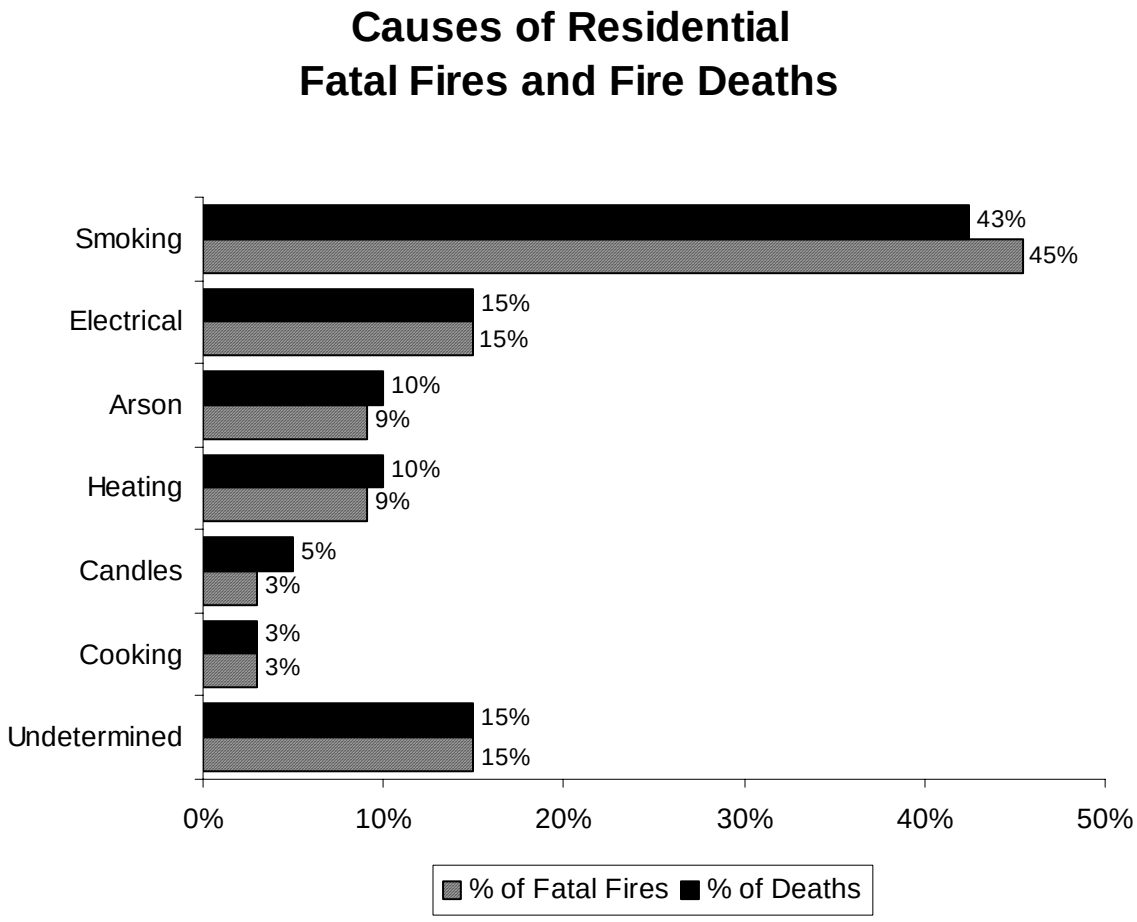
occurred in a residential board and care facility. Typically more fatal fires and associated deaths occur in and one- and two-family homes than occur in apartment fires. The graph below shows the number of fatal fire incidents and the number of civilian fatalities associated with various types of residential occupancies in 2007.



Once Again Smoking Fires Are the Leading Cause of Fire Deaths
In 2007, smoking fires were the leading cause of residential building fire deaths. These fires accounted for 17, or 43%, of residential fire deaths. For years, smoking has been far and away the leading cause of fatal fires and fire deaths in Massachusetts, with no other cause coming close except in 1999 and 2006. In 1999, cooking and smoking tied as the leading causes of fires that kill. In 2006, electrical fires were the leading cause of residential fire deaths. In 2007, electrical fires were the second leading cause of fire deaths accounting for six, or 15%, of residential fire deaths. Arson and heating fires tied for the third leading cause of fire deaths in 2007 with each accounting for four, or 10%, of the fire deaths.

In 2007 cooking was the leading cause of residential fires in Massachusetts but only the sixth leading cause of fatal residential fires. Residential fires caused by the improper or use or disposal of smoking materials was only the fourth leading cause of fires in the home.

The following graph illustrates the number of residential building fire deaths and the number of fatal residential building fires by cause. The classifications are ranked by the percentage of fire deaths that they caused.



15 Fatal Smoking Fires Cause 17 Deaths in Homes
Smoking was once again the leading cause of residential fire deaths and fatal residential building fires. In 2007, the improper use and disposal of smoking materials caused 15 fatal residential fires deaths and 17 fire deaths. The unsafe and improper use of smoking materials caused 43% of residential building fire deaths and 45% of fatal residential building fires. Nine (9) of the 16 residential building fire deaths of people over the age of 65 were caused by smoking.

9 Elderly Fire Deaths Caused by Smoking
In 2007, nine, or 50%, of all the older adult fire deaths were caused by the improper disposal of smoking materials while at home. In 2006 only one older adult died in a smoking-related fire. In 2005, two older adults died in smoking related fires. In 2004 there were no fire deaths to older adults caused by smoking at home.

- On January 5, 2007, at 4:03 p.m. the Stoneham Fire Department was dispatched to a fatal smoking fire in a 10-unit apartment building. The fire began in the living room of a third floor apartment. The victim, a 74-year old man, fell asleep while smoking and succumbed to his injuries. No one else was injured at this fire. Smoke detectors were present but failed to operate because of missing batteries. Sprinklers were not present. Damages from this fire were estimated to be $150,000.

- On January 18, 2007, at 1:12 a.m. the Wareham Fire Department was called to a fatal smoking fire in a 7-unit apartment building. The fire began in a second floor kitchen. The 80-year old female victim had improperly disposed of her cigarette in the trash. There were no other injuries at this fire. Smoke detectors were present but it was undetermined if they operated. Sprinklers were not present. Damages from this fire were estimated to be $175,000.

- On February 21, 2007 at 6:27 a.m., the Marshfield Fire Department was called to a fatal smoking fire in a single-family home. The victim, a 65-year old woman, lit her cigarette that in turn ignited her clothes. There were no other injuries associated with this fire. Smoke detectors were present and operated. Sprinklers were not present. No estimation of the damages was made for this fire.

- On March 24, 2007, at 4:15 a.m., the Marshfield Fire Department was called to a fatal smoking fire in a six-unit apartment building. The victim, a 53-year old woman, was possibly impaired by drugs and sleeping at the time of the fire. The victim died from smoke inhalation and the burns sustained in the fire. Detectors were present but it was undetermined if they operated. No one else was injured in this fire. No estimation of the damages was made for this fire.

- On April 4, 2007, at 1:31 a.m., the Acton Fire Department was called to a fatal smoking fire in a single-family home. A cigarette ignited an upholstered chair in a bedroom. There were two victims, a 70-year old woman and her 72-year old husband. There were no other injuries associated with this fire. Smoke detectors were present but failed to operate because of a dead battery. No estimation of the damages was made for this fire.

- On April 22, 2007 at 12:00 a.m., the Revere Fire Department was called to a fatal smoking fire in a 4-unit apartment building. The fire started in a basement bedroom by a cigarette that fell on an upholstered chair. The victim, a 50-year old man was possibly impaired by alcohol. He was transported to a local hospital where he died from burns and smoke inhalation. Detectors were present and alerted the other occupants of the building. Sprinklers were not present. Damages from the fire were estimated to be $55,000.

- On July 14, 2007, at 12:46 a.m., the New Bedford Fire Department was called to a fatal smoking fire in a single-family home. The fire began in a first floor apartment's living room sofa. The victim, a 78-year old woman had a heart attack while attempting to extinguish the fire. There were no other injuries associated with this

fire. Smoke detectors were present and operated. No estimation of the damages was made for this fire.

- On July 26, 2007, at 11:44 a.m., the Springfield Fire Department was called to a fatal smoking fire in a single-family home. The fire was started by a cigarette on the living room sofa. The victim, a 46-year old was physically disabled woman, was discovered by firefighters and transported to a local hospital where she later died from smoke inhalation. No other injuries were associated with this fire. It was undetermined if smoke detectors were present. Damages from the fire were estimated to be $60,000.

- On September 4, 2007, at 9:27 a.m., the Arlington Fire Department was called to a fatal smoking fire in a 70-unit apartment building. The victim, a 70-year old woman was the only thing that burned. Upon arrival, firefighters found no fire, only the victim lying face down on the kitchen floor with burns to her body. Detectors were present but they failed to operate. The building was not sprinklered. No estimation of the damages was made for this fire.

- On October 28, 2007, at 8:55 p.m., the Pittsfield Fire Department was called to a fatal smoking fire in a 44-unit rooming house. The victim, a 50-year old man was possibly impaired by alcohol. The fire started by a cigarette in the victim's bedding. No one else was injured at this fire. Detectors were present and alerted the other occupants of the building. Sprinklers were present and operated effectively. Damages from the fire were estimated to be $95,000.

- On October 19, 2007, at 10:44 p.m., the Woburn Fire Department was called to a fatal smoking fire in an apartment building. The victim, a 21-year old woman was intimately involved in the ignition. One firefighter was injured fighting this fire. Detectors were present and operated. The building was not sprinklered. Damages from the fire were estimated to be $330,000.

- On December 5, 2007, at 2:36 p.m., the Brockton Fire Department was called to a fatal smoking fire in a single-family home. The victim, a 74-year old physically disabled man was smoking a cigarette in bed. The cigarette ignited his bedding. He was transported to a local hospital were he later died from his injuries. Two (2) civilians were injured in this fire; one while escaping, the other while trying to extinguish the fire. Four (4) police officers also suffered from smoke inhalation in attempting to rescue the victim. Detectors were present and alerted the other occupants of the home. Sprinklers were not present. Damages from the fire were estimated to be $15,000.

- On December 18, 2007, at 11:59 p.m., the Chicopee Fire Department was called to a fatal smoking fire in a manufactured home (trailer). The victim was a 56-year old woman. The fire started by undetermined smoking materials in the victim's bedding. No one else was injured at this fire. Detectors were present but it was undetermined if they operated. The house was not sprinklered. Damages from the fire were estimated to be $130,000.

- On December 30, 2007, at 1:12 a.m., the Boston Fire Department was called to a fatal smoking fire in a residential board and care facility. The victim, an 81-year old man fell asleep while smoking a cigarette. The cigarette ignited the victim's bedding. Detectors operated and alerted the other occupants of the building. The sprinkler system operated and successfully suppressed the fire. There were no other injuries associated with this fire. Damages from the fire were estimated to be $10,000.

- On December 31, 2007, at 7:41 p.m., the Boston Fire Department was called to a fatal smoking fire in a 20-unit apartment building. The victims, a 46-year old woman and her 47-year old husband could not escape the fire that started in their apartment. Detectors operated and alerted the other occupants of the building. Sprinklers were not present. There were no other injuries associated with this fire. Damages from the fire were estimated to be $5,000,000.

5 Fatal Electrical Fires Cause 6 Deaths

Five (5) fatal electrical fires, or 15% of fatal residential building fires, caused six, or 15%, of residential building fire deaths in 2007.

- On January 7, 2007, at 5:57 a.m., the Springfield Fire Department was called to a fatal electrical fire in a single-family home. The fire was caused by an overheated electrical extension cord in the first floor living room. The victims, a 53-year old woman and her 16-year old son were trapped by the fire. They were discovered by firefighters during a primary search. No one else was injured at this fire. Detectors and sprinklers were not present. Damages from the blaze were estimated to be $54,000.

- On February 17, 2007 at 10:12 p.m., the Boston Fire Department was called to a fatal electrical fire in a single-family home. The fire was started by electrical arcing in the living room. The victim, an 81-year old woman, was sleeping at the time of the fire. She was transported to a local hospital where she later died from her injuries. No one else was injured at this fire. Detectors and sprinklers were not present. Damages from this fire were estimated to be $150,000.

- On April 29, 2007, at 4:51 a.m., the Nantucket Fire Department was called to a fatal electrical fire in a single-family home. An electrical failure in a bedroom ignited an upholstered chair. The victim, an 80-year old man was overcome by the heat and smoke. One firefighter was injured at this fire, and damages were estimated to be $260,000. Smoke detectors were present but they failed to operate because of improper installation.

- On May 13, 2007 at 12:32 a.m., the Boston Fire Department was called to a fatal electrical fire in a 50-unit apartment building. The fire was caused by a short-circuit in the bedroom. The victim, a 59-year old man, was sleeping at the time of the fire. No one else was injured at this fire. Detectors were present and operated. Sprinklers were not present Damages from this fire were estimated to be $150,000.

- On June 3, 2007, at 5:47 p.m., the Seekonk Fire Department was called to a fatal electrical fire in a single-family home. An overturned halogen lamp fell on magazines and newspapers strewn about the floor. The victim, an 86-year old man, was unable to act to save himself and was overcome by the heat and smoke. There were no other injuries at this fire. Smoke detectors were present and operated. The building was not sprinklered, and damages were estimated to be $175,000.

3 Fatal Arson Fires Cause 4 Deaths
Four (4) people died in three (3) residential arson fires in 2007. Arson accounted for 10% of fire deaths and 9% of the fatal fires in residential buildings. One of these three victims committed self-immolation. Self-immolation is considered arson because the fire is intentionally set.

- On January 7, 2007, at 11:37 p.m. the Springfield Fire Department was called to a fatal arson fire in a two-family home. The 47-year old female was doused with gasoline and ignited by an ex-boyfriend. The victim had taken out a restraining order against her assailant. The attacker and four firefighters were also injured at this fire. Smoke detectors were present and alerted the other occupants. Sprinklers were not present. Damages from this fire were estimated to be $55,000.

- On May 17, 2007, at 4:54 a.m. the Randolph Fire Department was called to a fatal arson fire in a single-family home. The fire was set in the first floor living room, on or near an overstuffed chair. The victims, a 10-year old boy and his 17-year old brother, were sleeping at the time of the fire and were unable to escape from their second floor bedroom when they were overcome by the heat and smoke. Four (4) other family members and one firefighter were also injured at this fire. It was undetermined if detectors were present. The fire caused an estimated $130,000 worth of damage.

- On December 14, 2007 at 12:59 p.m., the Ludlow Fire Department was called to a successful attempt at self-immolation in a single-family home. The victim, an 81-year old woman, doused herself with gasoline and ignited it. The fire was out upon arrival of the ambulance and firefighters. She was transported to a local hospital where she later succumbed to her wounds. Sixty percent (60%) of her body surface area was burned. Because she lit herself on fire in the garage, and she was the only thing that burned, detectors were not present in the immediate area. No one else was injured at this fire. No estimation was made as to the damages incurred by this fire.

3 Fatal Heating Fires Cause 4 Deaths
Three (3) fatal heating fires, or 9% of fatal residential building fires, caused four, or 10%, of residential building fire deaths in 2007. A space heater, a propane heater and a woodstove caused these fires.

- On January 10, 2007 at 1:45 p.m., the Westfield Fire Department was called to a fatal propane heater fire in a single-family home. When firefighters arrived they found the

victim, a 68-year old man on the first floor. The victim stated that while working in his basement, he got too close to a propane heater and his clothing ignited, completely burning off his pants. He was transported to a local hospital were he later succumbed to his injuries. There were no other injuries associated with this fire. Detectors and sprinklers were not present. Damages were estimated to be $75.

- On February 16, 2007 at 8:18 a.m., the Warren Fire Department was called to a fatal heating fire in a single-family home. The 75-year old female victim had recently cleaned out her wood stove and placed the hot embers in her basement. She was overcome by the heat and smoke of the fire as she was attempting to extinguish it with a fire extinguisher. Three (3) firefighters were injured fighting this fire. Detectors and sprinklers were not present. Damages were estimated to be $140,000.

- On December 29, 2007 at 12:08 a.m., the Boston Fire Department was called to a heating fire in a 3-unit apartment building. The fire was caused by a portable space heater being placed too close to the victims' bedding. The victims, a 9-year old girl and her 11-year old sister were sleeping at the time of the fire and were overcome by the heat and smoke. There were no other injuries associated with this fire. It was undetermined if detectors were present, but sprinklers were not. Damages were estimated to be $300,000.

1 Candle Fire Caused 2 Deaths
One fatal candle fire, or 3% of all fatal residential building fires, caused two, or 5%, of residential building fire deaths in 2007.

- On February 24, 2007, at 5:16 a.m., the Boston Fire Department was called to a fatal candle fire in a 9-unit apartment building. The victims, a 21-year old woman and a 22-year old man, were both college students living in off-campus housing. A third student, a 22-year old man, suffered life–threatening injuries at this fire. They had lit the candles for light due to a power outage. All three were sleeping at the time of the fire and the two victims died from the burns and smoke inhalation. Detectors were present but failed to operate due to the power outage. Damages were estimated to be $900,000.

1 Cooking Fire Caused 1 Death
One (1) Massachusetts resident died in one residential fire caused by embers from a barbeque. This fire accounted for 3% of the fire deaths and 3% of fatal fires in people's homes in Massachusetts.

- On March 16, 2007, at 5:46 a.m., the Brookline Fire Department was called to a fatal cooking fire at a 3-unit apartment building. The victim, a 19-year old college student was visiting friends in their off-campus apartment. Someone had used a charcoal grill on the back porch the night before. Embers from the grill ignited the porch. The victim's unfamiliarity with the apartment led him to a bedroom closet instead of an exit and he succumbed to the smoke and heat generated by the fire. One firefighter was injured at this fire. Detectors were present and alerted the occupants of the

building. Sprinklers were not present. Damages from the blaze were estimated to be $528,000.

5 Fatal Fires of Undetermined Cause

Five (5) fatal residential building fires that took the lives of six Massachusetts residents in 2007 remain undetermined after investigation. These represent 15% of the fatal fires, and the six related deaths represent 15% of the fire deaths in 2007. The cause of less than one-fifth of all residential fire deaths could not be definitely determined after investigation. According to the National Fire Protection Association (NFPA) standard 921, Chapter 16.2.4, whenever the cause of a fire cannot be proven, the proper classification is "undetermined." NFPA 921, Chapter 16.2.5 advises that, "Undetermined is also acceptable when multiple fire causes or ignition factors cannot be eliminated, leaving the investigator with most probable causes."

- On March 28, 2007, at 11:48 p.m., the Westford Fire Department was called to a fatal fire in a 4-unit apartment building of undetermined cause. The fire started in the first floor living room. The improper disposal of smoking materials and an electrical malfunction are the two most probable ignition scenarios. The victim, a 21-year old woman, was attempting to escape the fire and became incapacitated by the heat and smoke and died from burns and smoke inhalation. It was undetermined if smoke detectors were present and there were no sprinklers. Damages from this fire were estimated to be $402,301.

- On April 16, 2007, at 4:09 a.m., the Westfield Fire Department was called to a fatal fire of undetermined cause in a manufactured home (trailer). The fire started near the center area of the mobile home and spread to the entire building. The victims, the 43-year old male occupant of the trailer and a 31-year old man, were both sleeping at the time of the fire and both were overcome by smoke. Their bodies were found after the fire was extinguished. No one else was injured at this fire. Smoke detectors were not present. Damages from this fire were estimated to be $20,000.

- On September 27, 2007 at 9:58 p.m. the Worcester Fire Department was called to a fatal fire in a three-decker of undetermined cause. The fire began on the rear stairs. The victim, a 47-year old woman, was asleep at the time of the fire and died from burns and smoke inhalation. Nine (9) firefighters were injured battling this fire. Detectors were present and alerted the other occupants of the building. The building had no sprinklers and no estimation of the damages was made for this fire.

- On November 16, 2007 at 11:06 p.m., the Hyannis Fire District was called to a fatal fire in a single-family home of undetermined cause. The fire started in the first floor living room. The improper disposal of smoking materials is the most probable ignition scenario. The victim, a 54-year old woman, was found on her bedroom floor. Her 73-year old husband was sleeping in another bedroom. He managed to jump off of a side balcony, and was transported to a local hospital for treatment. There were no other injuries associated with this fire. It was undetermined if detectors were present. Damages from this fire were estimated to be $204,600.

- On December 14, 2007 at 11:46 p.m., the Gloucester Fire Department was called to a fatal fire of undetermined cause in a 25-unit apartment building. The 8-alarm fire completely destroyed the apartment building along with the synagogue next door. The victim, a 70-year old man, was overcome by the heat and smoke as he attempted to escape. No one else was injured at this fire. Detectors were present and alerted the occupants of the building. The building had no sprinklers. No estimation of the damages was made for this fire.

Bedroom or Living Room Is the Area of Origin for Almost 1/2 of All Victims
Given the time most fatal fires occur, and that many people fall asleep in their living rooms, it is not surprising that almost half were killed in fires that started in the bedroom or living room. Eighteen (18), or 45% of residential fire victims died in a fire originating in the bedroom or living room. Thirteen (13), or 33%, succumbed to fires that originated in the bedroom, and five victims, or 13%, died in fires that began in the living room. Nine (9), victims, or 23%, perished in fires that began in unclassified function rooms. Four (4) victims, or 10%, died when the area of origin was the kitchen. The basement was the area of origin for two, or 5%, of the deaths. An exterior balcony, an exterior stairway, and a garage were each the area of origin for one, or 3% of the residential fire deaths in 2007. The area of origin was undetermined for three, or 11% of these fire fatalities.

Over 1/3 of Deaths Involved Smoking Materials as a Heat Source
Over one-third of deaths involved smoking materials as a heat source. Of the 40 residential building fire deaths, 38% involved smoking materials: 30% were from cigarettes, and 8% were from unspecified smoking materials. Eighteen percent (18%) involved heat from operating equipment; 13% involved heat from unclassified operating equipment, and 5% was from radiated or conducted heat from operating equipment. Candles and matches[45], each caused 5% of these deaths. Arcing, a cigarette lighter used in a smoking fire, hot embers or ash, and an unidentified smoldering object were each involved in 3% of residential fire deaths in 2007. Heat source was undetermined in 10 deaths, or 25%, of the residential building fire deaths in 2007.

Upholstered Sofa or Chair Is Ignited First in 20% of Deaths
Of the 40 residential building fire deaths, 20% were from fires where an upholstered sofa or chair was the item first ignited. Bedding, including mattresses and pillows, was the item first ignited in 15% of residential fire deaths. Wearing apparel on a person was the item first ignited in 8% of these deaths. Electrical wire or cable insulation, furniture, and newspapers were each the item first ignited in 3% of the fatal fire deaths in 2007. In one instance, or 3% of these deaths, it was reported that multiple items were the item first ignited. First material ignited was undetermined in 18, or 45%, of the residential building fire deaths in 2007.

The National Association of State Fire Marshals (NASFM) has supported mandatory national fire safety standards for mattresses and upholstered furniture for the past decade.

[45] One fire started by a match was used in an arson and the fire the match was used to light a cigarette.

NASFM and the CPSC has recommended the national adoption of the most recently revised California standard (California Technical Bulletins 116 & 117) for upholstered furniture that addresses both small open flame (match, lighter, candle) and cigarette ignitions and the California standard (California Technical Bulletin 603) for resistance of a mattress/box spring set to a large open flame. These standards make the average piece of furniture less likely to ignite rapidly, and if ignited, less likely to burn quickly or sustain burning[46].

Although many buildings and building materials help contain fires, the problem is that all of the contents we have inside our homes are more flammable than ever and create ever increasing levels of toxic gases when they burn.

No Working Detectors for 38% of Residential Fire Victims

Of the 40 people who died in residential building fires in 2007, the smoke detector performance was known for 30 of the victims. Victims were not alerted by smoke detectors in 11 fires that killed 15 people, or 38% of the victims. No detectors were present at all, in eight, or 20% of the deaths. In seven of these deaths, or 18%, there were detectors present but they failed to operate.

Fifteen (15) people died in 14 separate residential fires with detectors that did operate, accounting for 38% of fatal fire victims. It is important to remember that detectors provide an early warning of a fire. They do not guarantee an escape if exits are blocked or an individual's clothing ignites. A fire that appears small when discovered can quickly grow beyond an individual's ability to control or escape it.

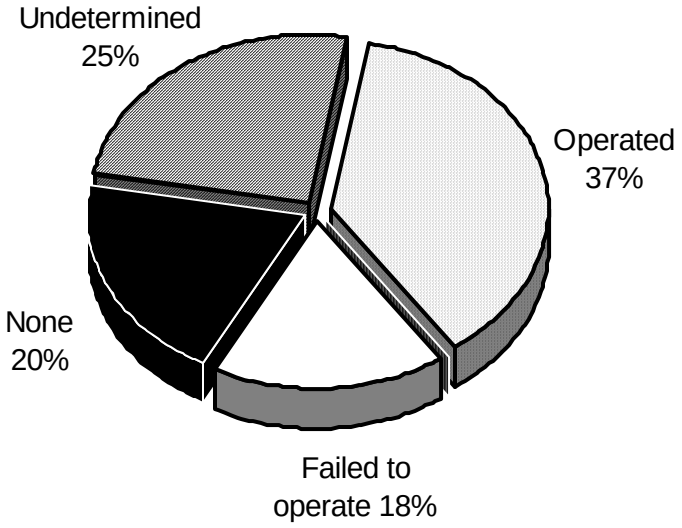
In 2007, three of the 15 fatal residential fire victims that had their smoke detector operate were in the area of origin. One (1) of the victims was intimately involved with ignition while the other two were in the same room and died while they tried to escape. Three (3) other victims were not in the area of origin but were somehow involved in the ignition of the fire. It was undetermined where the other nine victims were at the time of the fire started. While smoke detectors cannot by themselves save a person who is directly involved in the ignition, they can alert other occupants to the danger and give them precious time to escape to safety.

Detector performance was undetermined in eight residential building fires that killed 10 people accounting for 25% of the residential building fire deaths in 2007. The pie chart shows the smoke detector status as a percentage of the civilian residential building fire deaths in 2007.

---

[46] There has been some debate about the use of certain types of flame retardant used to make products conform to these standards. The issue is about using polybrominated diphenyl ethers (PBDEs) that have caused health concerns in animals in lab tests. According to the U.S. Environmental Protection Agency (EPA) production of these chemicals ceased in 2004 and their use will end when existing stocks are exhausted. The National Association of State Fire Marshals (NASFM) is working with health and environment toxicologists, the EPA and the U.S. Consumer Product Safety Commission (CPSC) in assuring that there are many other fire retardant chemicals that can be used with confidence on upholstered furniture.

Smoke Detector Operation for Fatal Residential Fires



No Working Smoke Detectors in 51% of Fire Deaths in 1 & 2-Family Homes
There were 31% more fire deaths in 1- & 2-family homes than all other residential occupancies combined. Twenty-one (21) people died in 17 one- and two-family dwelling fires in 2007. Eleven (11), or 51%, of the fire deaths in one- and two-family homes occurred in fires with no detectors at all or with detectors that failed to operate. Of these five deaths, three occurred in homes where smoke detectors failed to work while the other eight deaths were in homes where there were no smoke detectors present. Five (5) deaths, or 24%, occurred in a home where the smoke detector operated[47]. Another five deaths, or 24%, occurred in four fires where smoke detector performance was undetermined.

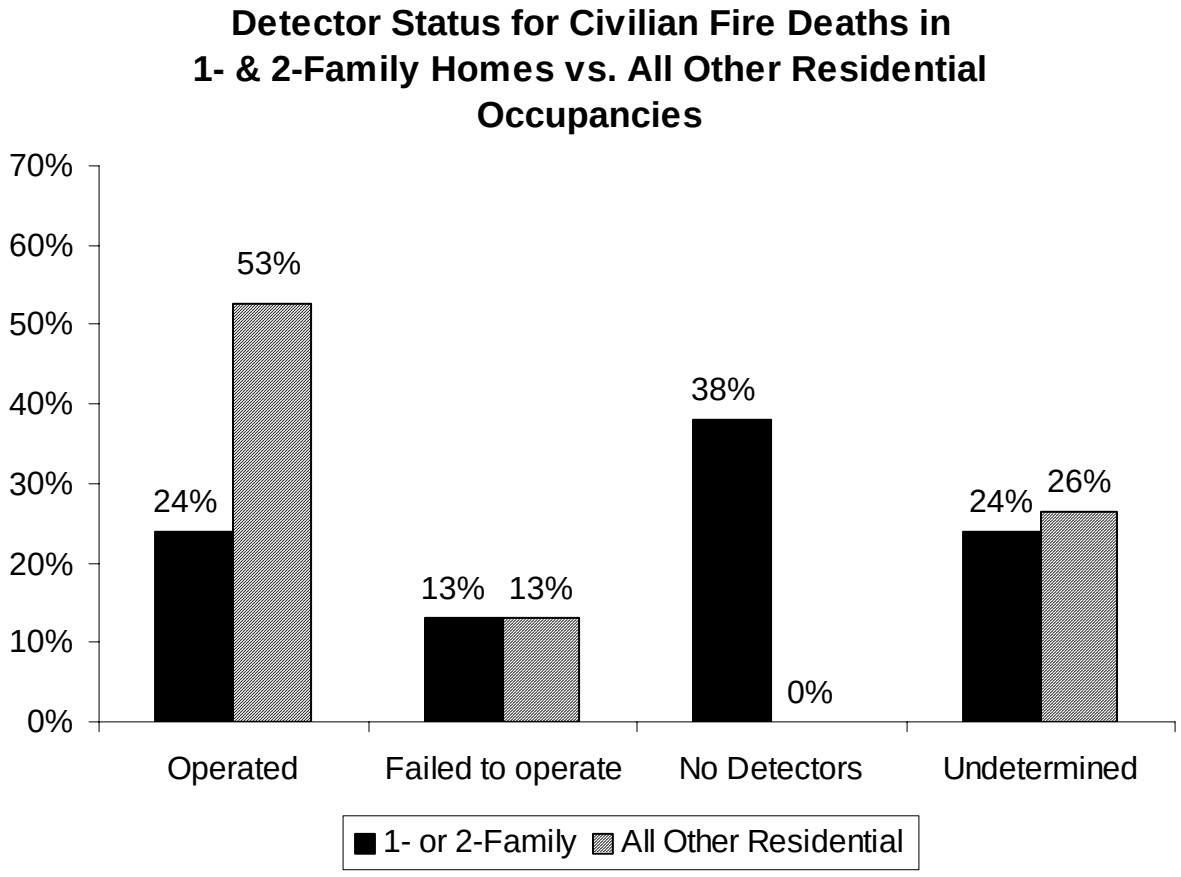
2 Detectors Failed from a Missing or Disconnected Batteries
Of the three residential fire deaths where smoke detectors were present but failed to operate, two deaths, or 67%, failed to operate because the batteries were either missing or disconnected. One death, or 33%, occurred when a detector did not operate because of improper installation or placement.

Other Residential Occupancies More Likely to be Protected by Smoke Detectors
Seventeen (17) people died in 14 apartment fires, one person died in a fire in a rooming house and another person died in a fire at a residential board and care facility in 2007. The detector performance was known for 12 of the 16 victims. No one died in these fires where there were no smoke detectors. Four (4) individuals perished in three fires where smoke detectors were present but did not function. Ten (10) people died in nine fires

[47] One of these was a homicide where the victim was attacked in a domestic violence incident.

where smoke detectors were present and working. Detector performance was unknown or not reported in four apartment fires where five people lost their lives.

The following graph illustrates the detector status in the percentage of deaths between 1- and 2-family homes and all other residential occupancies.



Sleeping Was the Leading Human Factor Contributing to Injury[48]
Of the 40 fatal residential building fire victims, 15 had some human factor contributing to their injury reported to MFIRS. Twenty-six percent (26%) of the victims were possibly asleep; 19% were possibly impaired by alcohol before they died; 10% were possibly impaired by a drug or chemical; 6% were bedridden or had another physical handicap; and 3% were unattended or unsupervised. Twenty-five (25), or 63%, of the 40 civilians fire deaths did not have a human factor contributing to injury reported.

Time is the Enemy in a Fire
A human factor contributing to injury is defined as the physical or mental state of the person shortly before becoming a casualty. Our data reports 26% of fatalities were asleep shortly before becoming a casualty. It also shows that 8% of these victims were

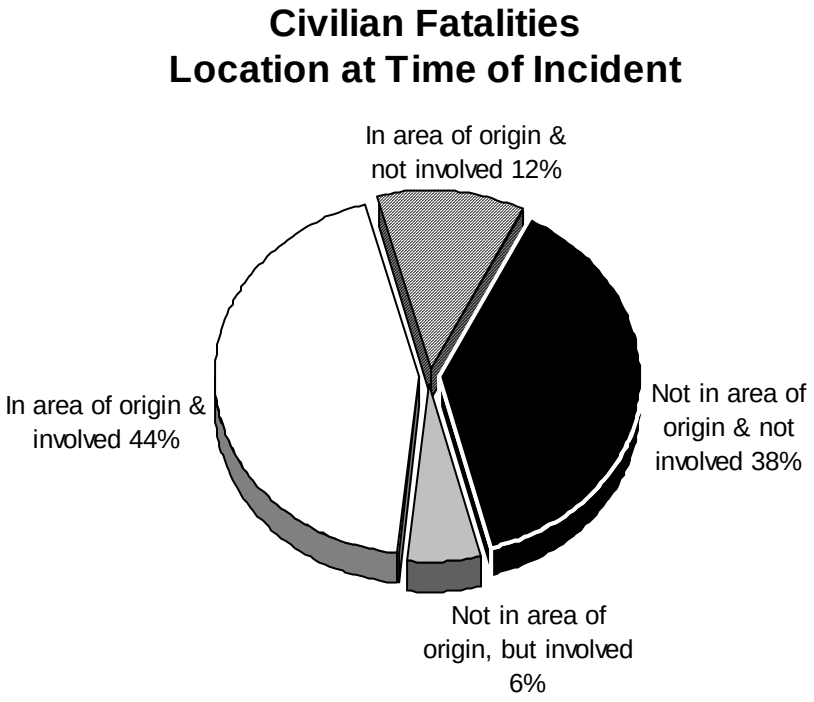
[48] Some fields in version 5 allow for multiple entries. Therefore the number of entries may be greater than the actual number of incidents being analyzed.

attempting to escape the fire when they were overcome. This would seem to indicate that some people were awoken from their sleep and attempted to escape before being overcome. This combined with the lack of working smoke detectors in 38% of the fire deaths indicates that victims did not have enough time to get to safety.

Most Victims Were Either Sleeping or Escaping When They Were Overcome
Fifteen (15), or 38%, of the 40 fatal fire victims were sleeping when they died. Eight percent (8%) of the victims were trying to escape. Fire control was the activity at the time of death for another 8% of the victims. The victim was unable to act in 5% of these deaths. Activity at time of death was undetermined for 17, or 43%, victims of fatal residential fires in 2007. Working smoke detectors combined with a home escape plan are essential to escape a fire.

70% of Victims Suffered Burns, Smoke Inhalation or Both
Burns or smoke inhalation was the primary apparent symptom for 28, or 97%, of the victims where the primary apparent symptom of their injury was known; 17, or 43%, suffered burns and smoke inhalation; eight, or 20%, suffered from smoke inhalation only, and three victims, or 8% died from only the burns incurred in the fire. Cardiac arrest was the primary apparent symptom for one, or 3%, of these victims. The primary apparent symptom was undetermined in 11, or 28% of the 2007 residential fire deaths.

56% of the Victims Were in the Area of Origin
Knowing where the victim was at the time of the incident and if they were intimately involved with the ignition of the fire, helps us determine if they could have escaped to safety with appropriate warning from smoke or heat detectors and more tenable conditions from sprinklers.

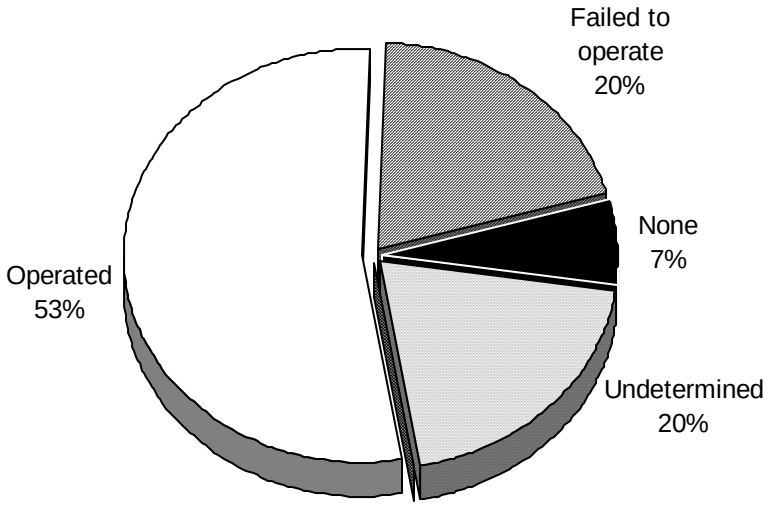


Nineteen (19), or 56%, of the residential fatal fire victims were in the area of origin of the fire. Fifteen (15), or 44%, of these victims were intimately involved with the ignition of the fire that killed them. These 15 were in the area of origin and somehow involved with the fire's ignition. Four (4), or 12%, were in the area of origin but not involved with the ignition, such as the college student who was asleep when embers from the previous night's barbeque started the fire. Two (2), or 6%, of these victims were not in the area of origin but were somehow involved in starting these fires; such as the person who is smoking and exits the room to go to bed, leaving the cigarette behind unattended. Thirteen (13), or 38%, of the victims were not in the area of origin and not involved with the ignition of the fire that claimed their lives. The *Location at Time of Incident* was unknown for six of the residential fatal fire victims. These six were excluded from the calculations.

62% of Detectors Operated When the Victim Was Intimately Involved in Ignition
There were 15 victims that were reportedly in the area of origin and involved with the ignition of the fire that killed them. Eight (8), or 62%, of these 15 victims, actually had a working smoke detector in their home at the time of the fire. Three (3) victims, or 15%, had a detector that failed to operate. One (1) victim, or 8%, did not have any smoke detectors in their home. It was undetermined for three, or 15% of the victims that were intimately involved with ignition whether their homes had operating smoke detectors.

In the case of one of the eight victims where the detectors operated and they were involved with the ignition, the victim knocked over a halogen lamp, and it ignited newspapers strewn about the floor. Five (5) of the victims started the fire with the improper disposal of smoking materials before they fell asleep, igniting bedding, a mattress and an upholstered chair. Another victim was a woman who dropped a match

Detector Perfomance of Fire Deaths When Victim Was in Intimately Involved with Ignition



that she was using to light a cigarette onto herself, igniting her clothes. It was undetermined how the fire that killed the last person in this category was started.

It is most probable that no amount of early warning would have saved any of these victims. This is where fire prevention and education become key components in saving lives.

Fatal Motor Vehicle Fires

In 2007, seven motor vehicle fires killed 10 civilians. Motor vehicle fire deaths are determined subsequent to the autopsy of the victim. When smoke is found in the lungs of the victim, it is an indication the victim survived the impact of the collision and was killed by the fire and not the crash. Six (6) of the fires and seven of the deaths involved automobile collisions; a murder suicide caused three of these deaths and smoking caused one of the fires.

5 Motor Vehicle Collisions Cause 5 Fires and 6 Deaths
Six (6) Massachusetts residents were killed in five separate motor vehicle collisions resulting in five motor vehicle fires. These five incidents accounted for 10% of the fatal fires and 10% of the fire fatalities in 2007.

- On February 12, 2007, at 1:38 a.m., the Chelsea Fire Department was called to a fatal car fire. The vehicle was first involved in a single car motor vehicle accident with the collision starting the fire. The 26-year old male victim was unable to be extricated from the vehicle and died from smoke inhalation and burns sustained in this fire. No one else was injured in this fire. Damages from the blaze were estimated to be $10,000.

- On March 4, 2007 at 12:59 a.m., the Centerville-Osterville-Marston Mills Fire District was called to a fatal car fire. First arriving firefighters found the vehicle off the side of the road, on its roof and fully involved in fire. The two victims, 22- and 21-year old women were trapped inside the vehicle and died from their burn injuries. No one else was injured in this fire, and damages were not estimated.

- On March 12, 2007, at 11:38 p.m., the Hopkinton Fire Department was called to a fatal tractor-trailer fire. The 44-year old male truck driver was seriously burned when the truck he was operating crashed into another tractor-trailer on the Massachusetts Turnpike. The victim was trapped inside the truck's cab and died from burns and smoke inhalation. No one else was injured in this fire, and damages were not estimated.

- On April 29, 2007 at 4:52 a.m., the Easton Fire Department was called to a fatal car fire. The driver was a 29-year old woman who was trapped. She died from her burn injuries. Damages were estimated to be $3,000.

- On October 31, 2007 at 11:06 a.m., Attleboro Fire Department was called to a fatal car fire on Interstate 95 near its junction with Interstate 295. Two vehicles were involved in this motor vehicle collision. Witnesses reported that the cars were racing at a high rate of speed, lost control and crashed off the side of the highway. First arriving firefighters found the vehicles off the side of the road, fully involved in fire, with both drivers trapped inside. One victim a 29-year old man, died from his burn injuries. It was determined by the Medical Examiner's office that the driver of the other vehicle, a 32-year old woman, was killed by trauma during the initial crash and is not a fire death. No one else was injured in this fire, and damages were estimated to be $32,000.

1 Murder-Suicide Car Fire Kills Father & 2 Children
A father and his two children died in a car fire of that was a murder-suicide and an act of domestic violence. This incident accounted for 2% of the fatal fires and 5% of the fire fatalities in the Commonwealth in 2007.

- On March 5, 2007, at 9:31 a.m., the Springfield Fire Department was called to a fatal arson car fire that was a case of murder-suicide and domestic violence. The perpetrator, a 37-year old man, picked up his children, a two-year old boy and a six-year old girl, from day care and drove them to their mother's, his estranged girlfriend's, workplace. He ignited the vehicle using an accelerant. They all died from smoke inhalation and burns sustained in this fire. No one else was injured at this fire. Damages from the blaze were estimated to be $13,000.

Smoking Causes 1 Motor Vehicle Fire Killing 1 Man
One (1) Massachusetts resident was killed in a car fire that was caused by smoking. This incident accounted for 2% of the fatal fires and 2% of the fire fatalities in the Commonwealth in 2007.

- On December 1, 2007, at 10:13 a.m., the Lynn Fire Department was called to a fatal car fire in a parking area behind a repair shop. The most likely scenario is that the victim, a 40-year old man, was drinking and smoking. He then fell asleep and the cigarette ignited the vehicle's seat. He died from burns and smoke inhalation. Three firefighters were injured fighting this fire. No estimation was made as to the damages incurred by this fire.

Other Fatal Fires

In 2007, four outside and other fire incidents killed four civilians. These four incidents accounted for 8% of the fatal fires and 7% of the fire fatalities in Massachusetts in 2007.

2 Arsons Kill 2 Massachusetts Residents
Two (2) Massachusetts residents were killed in two separate outside and other arsons. These two incidents accounted for 4% of the fatal fires and 3% of the fire fatalities in 2007.

Chelsea Woman Killed in Wilmington Brush Fire

- On January 29, 2007, at 9:12 p.m., the Wilmington Fire Department was called to a fatal fire brush fire behind an abandoned warehouse. The body of the victim, a 26-year old Chelsea woman, was found when the brush fire was extinguished. It is believed that someone abducted the victim and strangled her. Believing she was already dead, the abductor brought her to the abandoned warehouse and set fire to her body to conceal the crime. However, her cause of death was determined to be smoke inhalation. No one else was injured in this fire. No estimation was made as to the damages incurred by this fire.

Man Commits Suicide on Salisbury Beach

- On December 28, 2007 at 2:47 p.m., the Salisbury Fire Department responded to a successful self-immolation attempt at one of their public beaches. The victim, a 57-year old man, committed suicide by setting himself on fire. No one else was injured at this fire.

1 Cable Worker Killed While at Work
A Massachusetts man was killed in an outside electrical fire. This incident accounted for 2% of the fatal fires and 1% of the fire fatalities in 2007.

- On October 26, 2007, at 3:42 p.m., the Plymouth Fire Department responded to an outside electrical fire. Upon arrival, firefighters discovered a cable service truck with its bucket raised up to the level of the electrical wires on a utility pole. The victim, a 53-year old male cable technician, had let his uninsulated bucket come into contact with the high voltage electrical wires. The victim received fatal electrical burns in the ensuing fire. No one else was injured in this fire, and damages were not estimated.

1 Elderly Woman Killed While Smoking Outside
One (1) Massachusetts resident was killed in one outside smoking fire. This incident accounted for 2% of the fatal fires and 1% of the fire fatalities in 2007.

- On May 7, 2007 at 2:34 p.m., the Hingham Fire Department was called to an emergency medical call. Firefighters found the victim, an 89-year old woman, outside her nursing home. She was sitting on a chair smoking, and had accidentally ignited her clothes. She received burns to 20% of her body surface area. She was transported

to a local hospital and then transferred to a Boston hospital where she succumbed to her injuries two days later.

Multiple Fire Deaths

For statistical purposes, a fire is considered a multiple death fire if it kills three or more people. There was two multiple death fires in Massachusetts in 2007. The first multiple death fire occurred in Springfield on March 5, 2007[49] and was a domestic murder-suicide. The other multiple death fire occurred in Salem on November 6, 2007 and was caused by a steam pipe explosion at the electric generating power plant[50].

Civilian Fire Deaths - Conclusion

In 2007, there were 48 fatal fires in Massachusetts with 61 accompanying fatalities. This is a 39% increase from the record low of 44 deaths reported in 2006. Of these 61 deaths, 40 occurred in residential fires. The 39% increase is the second largest percentage increase in civilian fire deaths in the past 20 years. Only the 49% increase in fire deaths from 1999 to 2000 was greater[51] and 1999 itself set a previous record low for fire deaths in Massachusetts. There is usually a large percentage increase the year following a year with a record low number of fire deaths.

Smoking and Murder or Murder-Suicides the Reason for the Large Increase
There were 17 more civilian fire deaths in 2007 than in 2006. The main reason for this was the increase in smoking fire deaths. Eight (8) more people died in fires caused by smoking in 2007, seven in residential fires and one in an outside fire. Eight (8) more people also died in intentionally set fires in 2007. The main increase in deaths in these arsons were the seven victims of murders and murder-suicides.

Majority of Fire Deaths Occur in Residential Occupancies
We focus our analysis on residential fire deaths because it is where prevention can have the most impact. Eighty-five percent (85%) of all fatal structure fire victims, died in residential building fires. Twenty-one (21) of these deaths occurred in one- or two-family homes which is typical.

Smoking Fires Were the Leading Causes of Fire Deaths
In 2007, smoking fires were once again the leading cause of residential structure fire deaths. These fires accounted for 17, or 43%, of residential fire deaths. For years,

[49] The anecdote to this multiple death fire is on page 89.
[50] The anecdote to this multiple death fire is on page 89.
[51] 1999's 53 civilian fire deaths was also the record low at that time.

smoking has been far and away the leading cause of fatal fires and fire deaths in Massachusetts, with no other cause coming close except in 1999 and 2005. In 1999, cooking and smoking tied as the leading causes of fires that kill. In 2005, electrical fires were the leading cause of residential fire deaths. Electrical fires were the second leading cause of fire deaths in 2007, accounting for six, or 15%, of residential fire deaths. Arson and heating fires tied for the third leading cause of fire deaths in 2007 with each accounting for 10% of the fire deaths.

Older Adults (65+) at Greater Risk for Fire Death

Older adults, especially those between the ages of 65 and 74 had the greatest risk of dying in a fire. The risk of fire death for older adults is 2.2, the same as in 2006 and up slightly from 2.1 in 2005. This means that older adults were twice as likely to be fire-related fatalities. Eighteen (18) older adults died in fires in Massachusetts in 2007. Ten (10), or 56%, of these victims died smoking fires. The lack of working smoke detectors was a significant factor in senior fire deaths. In 56% of senior fire deaths there were no working smoke alarms.

People Were More Likely to Die in Fires That Occurred While They Slept

People were more likely to die in fires that occurred while they slept. Twenty-six percent (26%) of fire fatalities were sleeping at the time of their injury. Thirty-nine percent (39%) of the residential fire victims did not have a working smoke detector so they were never afforded the chance of escape because they had no prior warning. Almost half, 49%, of the victims died in fires that began in either the bedroom or living room. Upholstered sofas or chairs were the leading item first ignited in residential structure fire deaths; bedding and wearing apparel on a person were the second and third leading item first ignited, respectively. Also, 70% of these victims suffered burns, smoke inhalation or both.

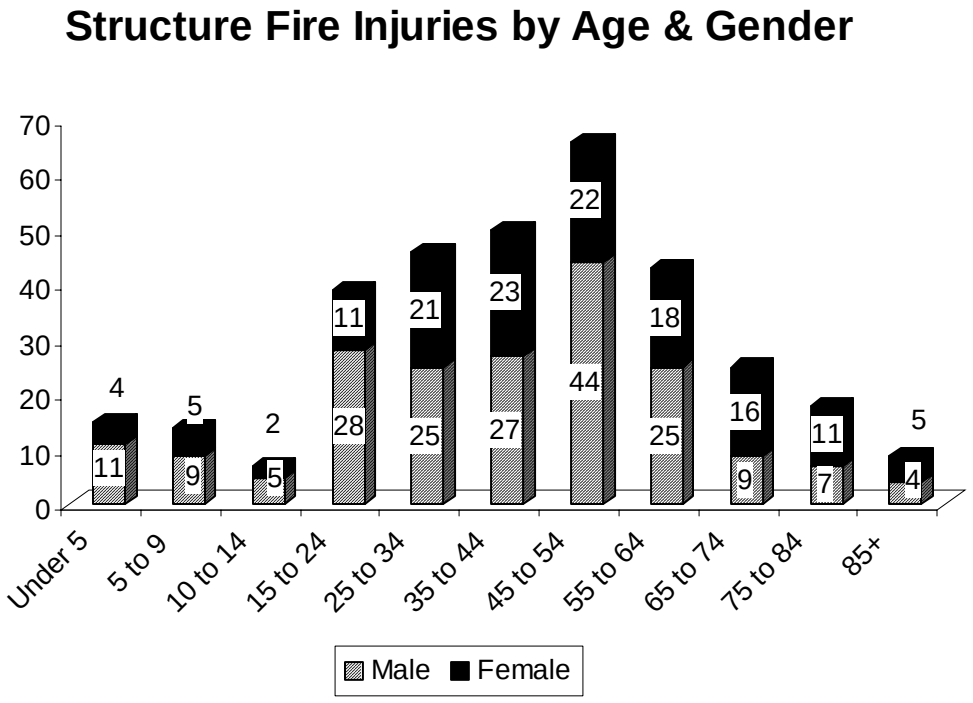
Nineteen (19), or 48%, of all the civilians that died in residential fires were reported to be in the area of fire origin. Of these 19 victims, 15, or 38%, were intimately involved in the ignition of the fire that killed them. It is most probable that no amount of early warning would have saved any of these victims. This is where fire prevention and education become key components in saving lives.

Civilian Injuries

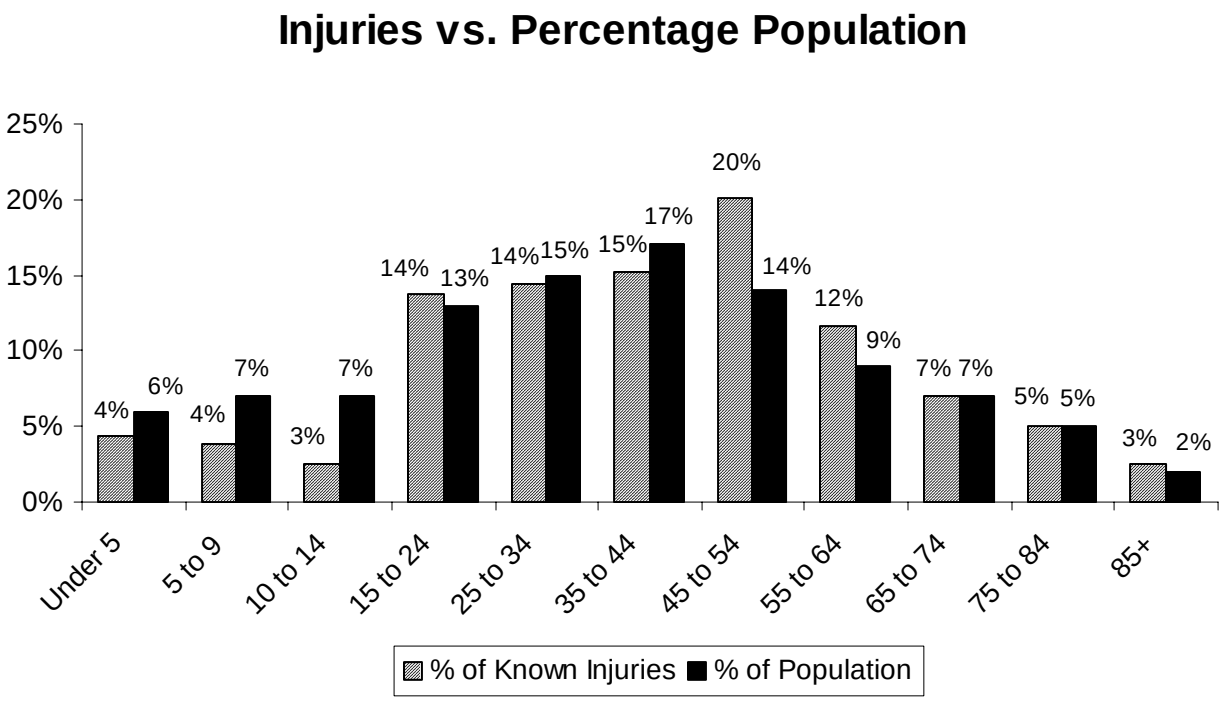
394 Civilians Injured in Fires in 2007 – Mostly at Home
Massachusetts' fires injured 394 civilians in 2007. Three hundred and thirty-two (332), or 84%, of civilian injuries occurred in structure fires. Three hundred and thirteen (313), or 94%, of all the structure fire injuries occurred in residential building fires. Twenty (20), or 5%, occurred in motor vehicle fires. Forty-two (42), or 11%, of civilian injuries occurred in outside and other fires. Special outside fires accounted for seven, or 2%, of civilian all civilian injuries. Outside rubbish fires accounted for another seven, or 2%, of civilian fire injuries; and brush fires accounted for six, or 2%, of all civilian injuries. Twenty-two (22), or 6%, of civilian injuries were caused by unclassified fires.

Structure Fire Injuries

Of the 332 civilian injuries resulting from structure fires where gender was reported, 194, or 58%, were men and 138, or 42%, were women. Overall, 41 children under 18 years of age, 239 adults and 52 older adults over the age of 65, were injured by structure fires in 2007. The following chart illustrates the structure fire injuries by age and gender in 2007. Men and women ages 35-44 and 45-54 were injured the most and adolescents between 10 and 14 and older adults over the age of 85 were injured the least in 2007. Fifteen (15) children ages 0-4 were injured; 14 children ages 5-9; seven children ages 10-14; 39 people ages 15-24; 46 people ages 25-34; 50 people ages 35-44; 66 people ages 45-54; 43 people ages 55-64; 25 people ages 65-74; 18 people ages 75-84; and nine people were injured that were over 85 years of age, of which four were men and five were women.



The following graph shows the percentage of injuries by age group and the percent of the population that age group represents in Massachusetts. When the percentage of injuries is greater than the percentage of population, that group is at a greater risk for being injured in a fire.



Adults 45 to 64 at High Risk for Fire Injury
Adults between the ages of 45 and 54 represent 14% of the Massachusetts population, yet the accounted for 20% of the injuries at structure fires in 2007. Adults between the ages of 55 and 64 represent 9% of the population and yet they accounted for 12% of the injuries in 2007. And older adults over the age of 85 represent 2% of the population and accounted for 3% of the injuries. The disparity in the percentage of injuries to the percentage of population is most likely caused by the tendency to try and control the fire. In these age groupings, over one-third, 38%, of the fire-related injuries were incurred while trying to control the fire.

In 2001, older adults over the age of 85 accounted for 9% of the civilian fire injuries. In 2003, as in 2002, they only accounted for 2% of these injuries. They also account for 2% of the Commonwealth's population. In 2006, 2005, and 2004, they accounted for 3% of the injuries and thus were at a slightly higher risk of receiving a fire-related injury.

83% of Injuries Were Directly Related to Exposure to Fire Products
Of the 295 civilian injuries in structure fires where the Cause of Injury was known, 83% were directly linked to exposure to fire products; 4% were caused by being struck by or contact with an object; 4% of the casualties were exposed to hazardous materials or toxic

fumes; and 1% each were caused by the victim falling, slipping or tripping, a structural collapse, the victim jumping in an escape attempt, the victim being caught or trapped, and overexertion. Three percent (3%) of the civilian fire injuries were caused by 'Other' causes; and less than 1% were reported to have multiple causes. The Cause of Injury was undetermined or not reported for 37 victims. These figures were not included in this analysis.

78% of Injuries Were Due to Smoke Inhalation or Burns or Both

Of the 260 civilian injuries in structure fires where the Primary Apparent Symptom was known, 44%, were caused by smoke inhalation only. Twenty percent (20%) were caused by thermal burns only. Burns and smoke inhalation together caused 15% of the injuries. Breathing difficulty or shortness of breath was responsible for 7% of these injuries. Cuts or lacerations caused 4% of these injuries. Two percent (2%) each were caused by scald burns and cardiac symptoms. Contusions or bruises, internal trauma, hazardous fume inhalation and strains or sprains each caused 1% of these injuries. Alcohol impairment, disorientation, emotional or psychological stress, shock, unclassified sickness and swelling each accounted for less than 1% of the structure fire-related injuries in 2007. 'None' was reported as the Primary Apparent Symptom for three of these victims. The nature of injury was undetermined or not reported in 69 civilian fire injuries. These were excluded from the percentage calculations.

35% Injured While Trying to Control the Fire

Of the 227 victims for whom activity at time of injury was known, 35% were attempting to control the fire. Twenty-seven percent (27%) were escaping. Thirteen percent (13%) were sleeping; 5% were attempting a rescue; 4% were acting irrationally; 4% returned to the vicinity of the fire before it was under control; 2% were unable to act; and less than 1% tried to return to the vicinity of the fire after it was under control. Eleven percent (11%) were injured in 'Other' activities. There were 105 injuries where the activity at time of injury was unknown; these were excluded from the percentage calculations.

Men More Likely to Be Injured Trying to Control the Fire

In 2007, 41% of male victims sustained their injuries while attempting to control the fire as compared to only 24% of female victims. This returns us to the normal trend prior to 2003 of men being more likely to be hurt while attempting to control the fire. A higher percentage of men (7%) sustained their injuries while making a rescue attempt than did women (1%), and 37% of women were attempting to escape compared to 21% of men. Eighteen percent (18%) of men and 13% of women were injured while sleeping; 5% of men and 4% of the women were injured returning to the vicinity of the fire before it was under control. There is a 1% or less difference between men and women in every other activity.

Historically Men More Apt to Get Hurt Trying to Fight the Fire
Historically, a higher percentage of men received fire-related injuries from trying to extinguish the fire themselves. In 2000, twice as many men than women were injured while trying to control the fire. In 2001 structure fires, men and women were equally likely to be injured attempting to control the fire. In 2002, men were 1.2 times more likely to be injured attempting to control the fire. In 2007 men were 2.8 times more likely to be injured this way.

The key to prevention of these injuries is to make and practice a home escape plan, remember to get out and stay out, and leave firefighting to the professionals. They have the training, equipment and protective clothing to do the job.

61% of Victims Were Asleep Just Before the Injury[52]
Of the 83 victims for which the human factor contributing to the injury was known, 61% were asleep; 17% were possibly impaired by alcohol; 8% were unattended or unsupervised persons; 6% were physically disabled; 2% were possibly impaired by drugs; 2% were unconscious; and another 2% were possibly mentally disabled.

The following table is a cross tabulation which allows us to know what the person was doing when injured and what was either their physical or mental state shortly before becoming a victim. The overall majority of civilian fire injuries came about through trying to control the fire. In version 4 being awake was a valid entry for *Condition Before Injury*. However in version 5 there is no equivalent code in the field *Human Factors Contributing to Injury*.

Most Injured People Asleep When Fire Started Slept Through Fire
When both of the fields, *Activity When Injured* and *Human Factors Contributing to Injury*, were completed, the majority of civilian fire injuries occurred when people were asleep at the time of injury and were still asleep at the time of the fire. The next leading result was when someone was asleep, awoke and attempted to escape.

[52] This is a new field. It is not mandatory that it be completed. It loosely corresponds to the version 4 field Condition Before Injury. This is the reason for the low number of victims for which the field had been completed. It also does not contain a corresponding value for the version 4 code - awake and unimpaired.

CIVILIAN INJURIES BY ACTIVITY AND PRIOR CONDITION

Human Factors Contributing to Injury

Activity At Injury	Asleep	Uncon-scious	Possibly Impaired: Alcohol	Possibly Impaired: Drugs	Mentally Disabled	Physically Disabled	Physically Restrained	Unsuper-vised
Escaping	**22**	1	1	0	0	2	0	1
Rescue attempt	1	0	0	0	0	0	0	0
Fire control	3	0	2	0	0	0	0	0
Return before fire control	1	0	1	0	0	0	0	0
Return after fire control	0	0	0	0	0	0	0	0
Sleeping	**16**	1	3	1	0	0	0	0
Unable to act	0	0	0	0	1	2	0	2
Irrational action	1	0	3	0	0	0	0	0
Other	0	0	1	0	0	1	0	1
Unknown	4	0	2	1	1	1	0	3
Total	48	2	13	2	2	4	0	7

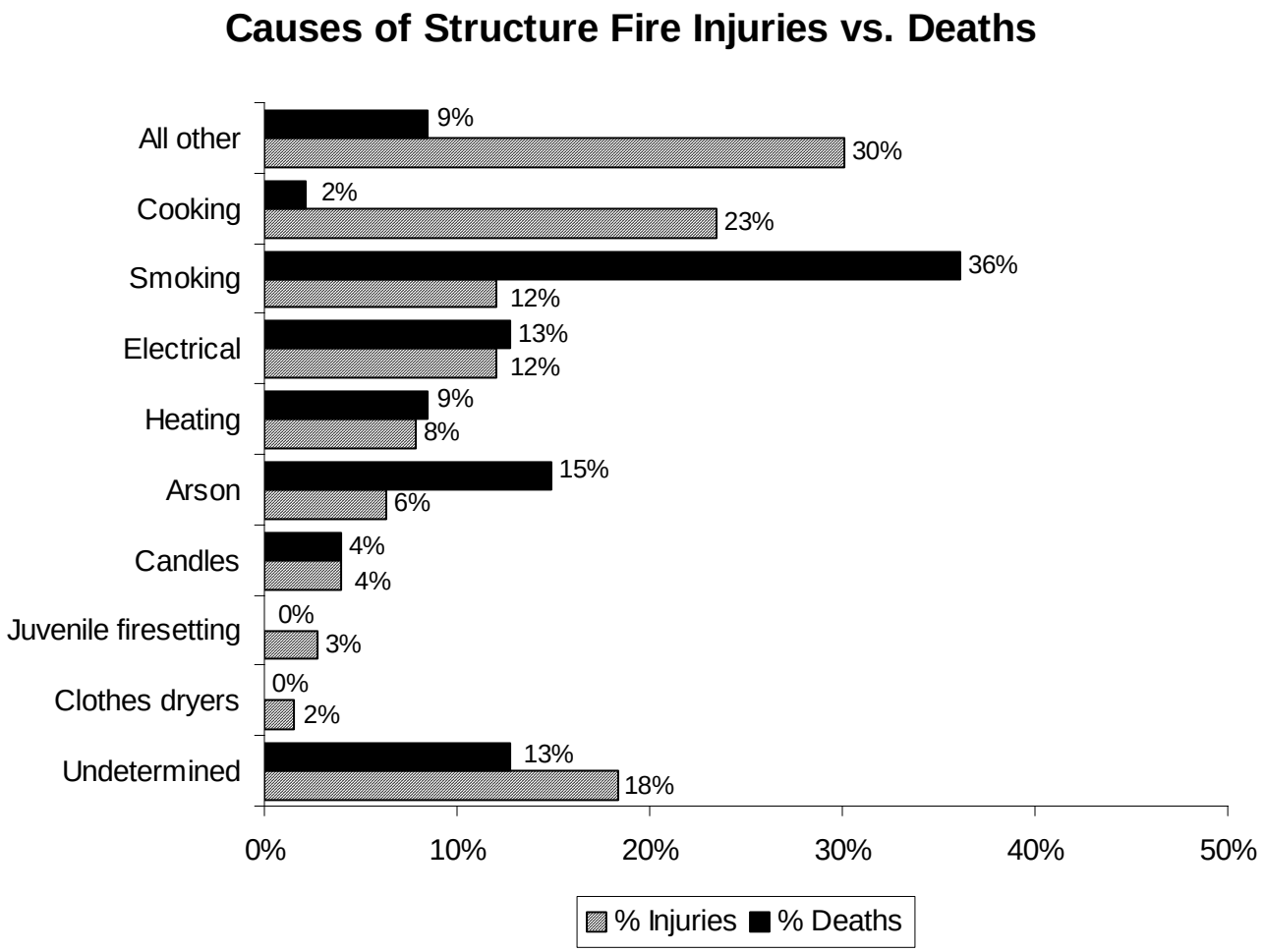
Almost 1/2 of All Victims Were Involved With the Ignition of the Fire

Forty-eight percent (48%), or almost half, of all victims were involved with the ignition of the fire that injured them. Ninety (90), or 34%, of the 234 civilian victims where *Location at Time of Incident* was known, were in the area of origin and intimately involved with the ignition of the fire. Twenty-three (23), or 10% were not in the area of origin but were involved with the start of the fire. An example of this is when someone is involved with the start of the fire (e.g. cooking, smoking, arson), leaves the area but becomes trapped by the heat or smoke of the fire and is injured in their attempt to escape. Sixty-four (64), or 27%, of the 261 victims were in the area of origin but not involved with the ignition of the fire. An example of this is when someone leaves food unattended on the stove in the kitchen and leaves the room. After the fire starts and the individual is alerted to its presence they are injured trying to put out the fire. Fifty-seven (57), or 24%, of these victims were not in the area of fire origin and were also not involved with its ignition The *Location at Time of Incident* was undetermined or not reported in 98 civilian fire injuries. These were excluded from the percentage calculations.

Cooking Fires Were the Leading Cause of Injuries in Structure Fires

Cooking fires were the leading cause of injuries in structure fires. Cooking fires caused 23% of structure fire injuries and 2% of structure fire deaths. Fires started by smoking caused 12% of structure fire injuries and 36% of structure fire deaths. Electrical fires, last year's leading cause of injuries, also caused 12% of structure fire injuries and 13% of structure fire deaths. Heating equipment fires caused 8% of injuries and 9% of deaths. Arson caused 6% of structure fire injuries and 15% of structure fire deaths. Candles caused 4% of injuries and 4% of the deaths. Juvenile-set fires caused 3% of structure fire injuries and none of the structure fire deaths in 2007. Clothes dryer fires caused 2% of the structure fire injuries and none of the structure fire deaths. All the other known causes of structure fires combined caused 30% of the structure fire injuries and 9% of structure fire

deaths[53]. In 2007, undetermined fires caused 18% of structure fire injuries and 13% of structure fire deaths in Massachusetts.



The leading cause of fire-related injuries is most often not the leading cause of fire-related deaths. In 2007, cooking fires caused the most injuries and smoking fires caused the most fire deaths. In smoking fires, the victim is usually intimately involved in the ignition of the fire. The victim usually falls asleep with a lit cigarette or cigar and the ashes or butt fall down upon and ignite the victim's clothing, bedding or furniture that they were sleeping upon. The resulting smoke usually renders the victim unconscious and unable to respond to any alarms and attempt an escape, and thus succumb to burns, smoke inhalation or both. In cooking fires, most of the victims are directly involved with the ignition of the fire. When the fire begins they are either alerted by working smoke alarms or by the smell of the smoke itself. The alerted individual usually either tries to control the fire or escape from the flames, incurring their injury in the process.

[53]The four deaths in the Other category of fires were from a steam pipe explosion in a power plant causing 3 deaths, and a person that was using a metal grinder and the sparks ignited his clothing.

Self-extinguishing Cigarettes Soon to be a Reality in Massachusetts
At present there does not seem to be any support at the national level to pass a federal law requiring fire-safe or self-extinguishing cigarettes. New York, Vermont, California and Canada have passed the Safer Cigarette Law, and similar legislation, the Reduced Ignition Propensity law, will take effect in January of 2008 in Massachusetts. By August of 2008 all of the states bordering Massachusetts will also be selling only this type of cigarette; and by January 1, 2009 in every state in the Northeast and Mid-Atlantic regions a consumer will only be able to buy one of these types of cigarettes. The fire service needs to redouble its efforts at the state level to get state legislation passed in all 50 states requiring manufacturers to produce and sell only self-extinguishing cigarettes creating a de facto national standard.

Detectors Operated in 57% of Structure Fires that Caused Injuries
Of the 332 injuries, 57% occurred where smoke detectors were present and operated. In 1% of these fires[54], the detectors did not alert the occupants. Eight percent (8%) of the injuries occurred in structure fires where detectors were present but did not operate. Seven percent (7%) of the injuries occurred where there were no detectors present in the structure at all. Six percent (6%) of civilian structure fire injuries occurred where the fire was too small to activate the smoke detector. Smoke detector performance was undetermined in 72 injuries, or 22% of all injuries. The presence of operating smoke detectors generally gives the victims the time needed to escape the byproducts of the fire; heat, flame and smoke.

Motor Vehicle Fire Injuries

There were 20 motor vehicle fire injuries in 2007. Eighty-five percent (85%) were men and 15% were women. Eighty-three percent (83%) of the injuries were caused by exposure to fire products, when cause was known. Eight percent (8%) were exposed to hazardous materials; and another 8% of the injuries occurred when the victim jumped in an escape attempt. When the primary apparent symptom was reported, 54% of these were reported as burns and smoke inhalation, 27% were reported as burns only; and another 27% were reported as smoke inhalation only. Where activity at time of injury was known, 50% of the victims were trying to control the fire when injured; 33% were trying to escape; and 17% returned to the vicinity of the fire before it was under control. The causes of motor vehicle fires that injured civilians in 2007 included fuel spills, collisions, arson, and mechanical malfunctions. See the Motor Vehicle Fire section for safety tips in the event of a car fire.

Outside and Other Fire Injuries

Forty-two (42), or 11%, of civilian fire injuries occurred in outside and other fire incidents in 2007. Seven (7), or 2% of civilian injuries were caused by special outside fires. Another seven, or 2%, of civilian injuries occurred in outside rubbish fires; and six,

[54] These represent confined fires where it was reported that the detector did not alert the occupants.

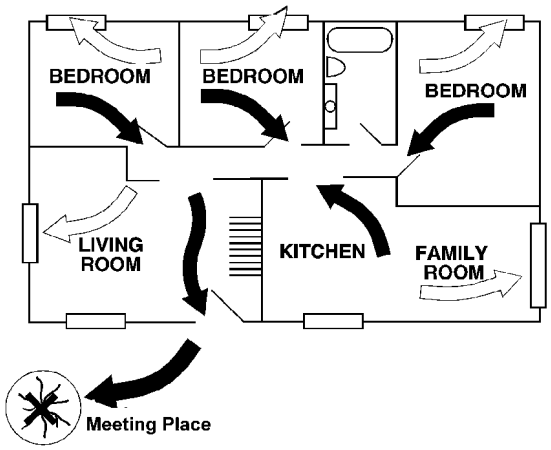
or 2%, occurred during brush fires. Twenty-two (22), or 2%, of civilian injuries were caused by unclassified fires.

Where gender was known, 71% of the civilian victims were men and 29% were women. Burns accounted for 57%, of the injuries to this group, when the primary apparent symptom was known. The victim was intimately involved with the ignition in two-thirds, or 80%, of these injuries where location at ignition was known.

Safety Practices Are the Best Prevention Methods

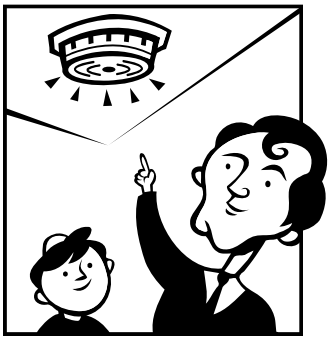
In a typical nighttime fire, there is a window of 2-4 minutes in the average home after the smoke alarm sounds for the family to get out safely. In a few minutes, heat and toxic gases make escape impossible. To survive a fire, one must install and maintain smoke detectors as well as make and practice an escape plan. It is these types of basic fire safety practices that are ignored by too many Massachusetts residents and results in fires, injuries, and deaths.

Home Escape Plan



- Practice your home escape plan with the whole family at least twice a year.
- Hold a nighttime drill to test if your children will react properly to a smoke alarm activation. Adjust your escape plan accordingly.
- Plan two ways out of each room. The easy way out is probably a door and the second way out might be a window.
- If you plan for a child or a senior to exit a window, make sure they can open it easily.
- If you can't get out, close your door and go to the window and signal for help.
- Teach children to never hide under beds or in closets.
- If you must go through smoke, crawl low. The coolest, cleanest air will be about 18 inches off the ground.
- Have a meeting place outside where everyone will meet. Be able to tell the fire department if everyone is out safely.
- Get out and stay out; don't go back into a burning building for anything.
- Telephone the fire department from a neighbor's house or use the fire alarm emergency box or use a cell phone a safe distance from the building.

Smoke Detectors

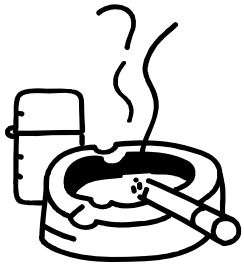


- Install smoke detectors on every level and outside each sleeping area.
- Test smoke detectors monthly.
- Replace the batteries twice a year.
- Never disable your detector.
- Replace detectors every 10 years.

Cooking Safety

- Put a lid on a grease fire to smother it then turn off the heat. Baking soda will also work.
- Wear short or tight fitting sleeves when cooking. Loose sleeves easily catch fire.
- Never throw water on a grease fire. Water will only spread the fire around.
- Never move a burning pan. You can too easily ignite your clothes or spill the fire onto someone or something else.
- Stand by your pan! Never leave cooking unattended.

Safe Smoking



- Quit!
- Never smoke in bed.
- Use large ashtrays with center rests so cigarettes fall into the ashtray not on the floor.
- Restrict smoking to outdoors.
- Do not smoke in homes or buildings where oxygen is used. Oxygen soaks into clothes, rugs, furniture, hair and bedding, creating an oxygen enriched environment, which make fires start more easily and burn more rapidly, even when the oxygen is "turned off."

Dryer Safety

- Clean the filter screen after each load.
- Stay home while the dryer is in use.
- Clean vents to outside.
- Vacuum the motor area periodically.
- Clean dryer vents regularly.

2007 Firefighter Deaths

In 2007, there were three fire-related fire service fatalities in two fires in the Commonwealth of Massachusetts. Firefighter Kelly Page of the Lowell Fire Department and Firefighters Paul Cahill and Warren Payne all succumbed to injuries sustained while battling building fires.

Lowell Firefighter Kelly Page Dies at Station after Fire Call
On September 14, 2007, at 1:34 p.m., the Lowell Fire Department was called to a fire in a vacant and secured 12-unit apartment building. Kelly Page, the 38-year old firefighter in full turnout gear and SCBA, removed the plywood blocking the front door and then made forcible entry into multiple units on various floors. The remnants of a small fire were discovered in the basement. Later that shift, FF Page collapsed on the apparatus floor from an apparent heart attack. His colleagues immediately began CPR and defibrillation. An ambulance transported him to a local hospital where he succumbed to his injuries.

Boston Firefighters Payne & Cahill Killed in Restaurant Fire
On August 29, 2007, at 9:06 p.m., the Boston Fire Department was dispatched to a fire at a Chinese restaurant. Cooking grease built up over time in the overhead ducts in the kitchen ignited. It is believed that the fire was burning for some time in the ceiling before employees noticed it. When they arrived, Firefighter Paul Cahill, 55-years old, stretched his hose line into the kitchen in an attempt to suppress the fire and Firefighter Warren Payne, 53-years old, began a search for employees or customers that might still be in the building. During operations a fireball immediately followed the collapse of the HVAC unit that was mounted on the roof. Firefighters Cahill and Payne were caught in the fireball and roof collapse. They were both taken to local hospitals where they later died from their injuries. There were no other injuries associated with this fire. Detectors were present and operated. An automatic extinguishing system was present but it was undetermined if it operated.

Fire Service Injuries

675 Firefighters Injured in 2007
In 2007, 675 firefighters were injured while fighting the 33,522 reported fires in Massachusetts. On average, one firefighter was injured at one of every 50 fires in 2007. Five hundred and sixty-four (564) firefighters were injured at structure fires. Twenty-one (21) firefighters were injured at motor vehicle fires. Ninety (90) firefighters were injured at outside and other fires.

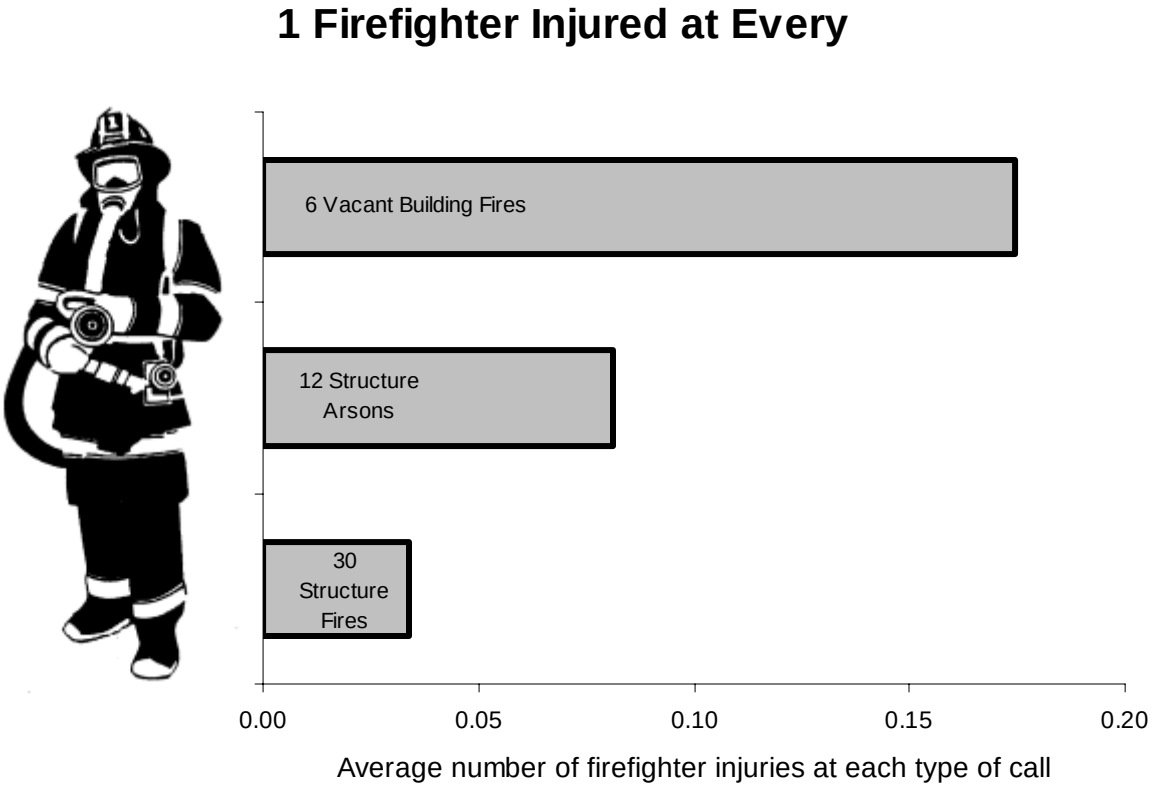
84% of Firefighter Injuries Occurred at Structure Fires
Firefighters were injured more frequently at structure fires than any other fire incident type. Eighty-four percent (84%) of firefighter injuries occurred at structure fires, while structure fires only accounted for 50% of all fires.

Electrical Fires Caused the Most Injuries at Structure Fires
The largest number of firefighter injuries took place at electrical-caused fires. Sixty-eight (68), or 12% of structure fire firefighter injuries occurred at electrical fires. Cooking fires accounted for 46, or 8%, of structure fire firefighter injuries, even though cooking caused the most structure fires. Thirty-seven (37) fire service injuries, or 7%, occurred at smoking fires. Fires caused by heating equipment accounted for 35, or 6%, of all fire service structure fire injuries. Arson fires accounted for 28, or 5%, of fire service injuries at structure fires.

Firefighters Injured at 1 of Every 6 Vacant Building Fires
One of the most dangerous types of fires for firefighters in 2007 was vacant building fires. Vacant building fires accounted for 68, or 10%, of all firefighter injuries in 2007. These 68 injuries also represent 12% of the number of firefighter injuries incurred fighting structure fires in 2007. On average there was one firefighter injury for every six vacant building fires; one firefighter injured at every 12 structure arsons; and one firefighter injured at every 30 structure fires[55].

The following graph illustrates this.

[55] On average there were 0.17 firefighter injuries at every vacant building fire; there were only 0.068reported firefighter injuries per structure arson in 2007; and there was 0.03 reported firefighter injuries per structure fire in the Commonwealth in 2007.

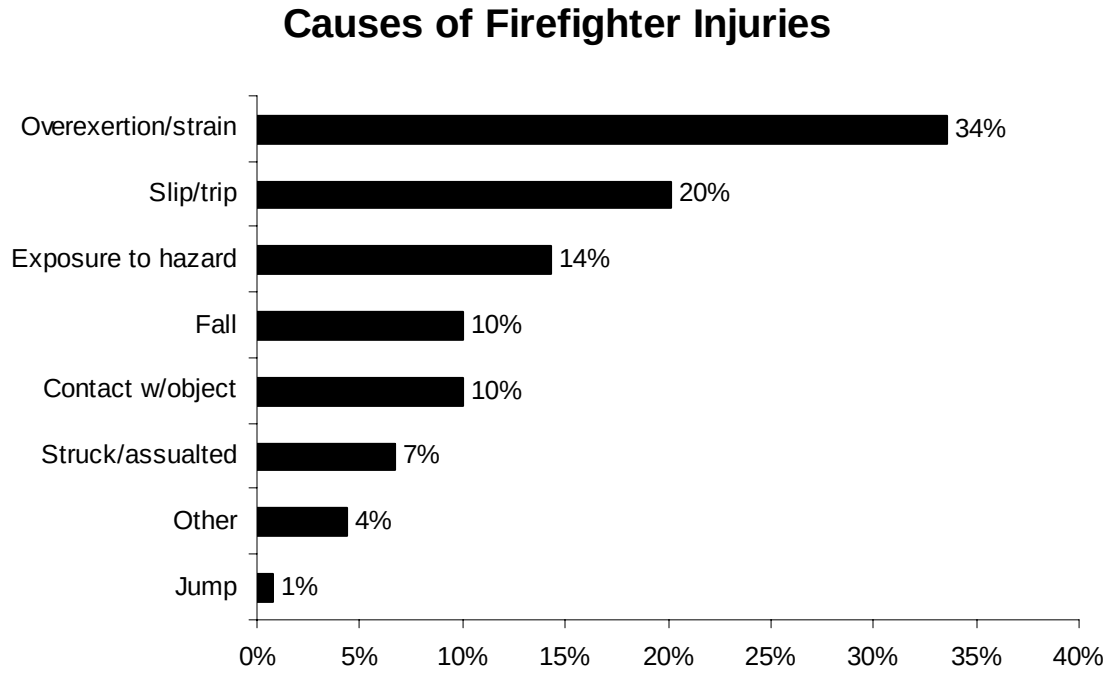


Over 3/4 of Firefighter Injuries Minor

Over three-quarters of reported firefighter injuries were minor. When examining the severity of the 675 firefighter injuries that reported severity, 46% of the injuries were reports only, including exposures to toxic substances or harmful physical agents through any route of entry into the body. Moderate severity injuries accounted for 27% of firefighter injuries, meaning that immediate medical attention was needed but there is little danger of death or permanent disability. Thirteen percent (13%) reported having been treated by a physician with no time lost. Twelve percent (12%) of these injuries were recorded as only needing first aid. Two percent (2%) of firefighter injuries were coded as severe. This means that the injury was potentially life threatening if the condition was not controlled. Three (3), or less than 1% of the reported firefighter injuries were life threatening, where body processes and vital signs were not normal.

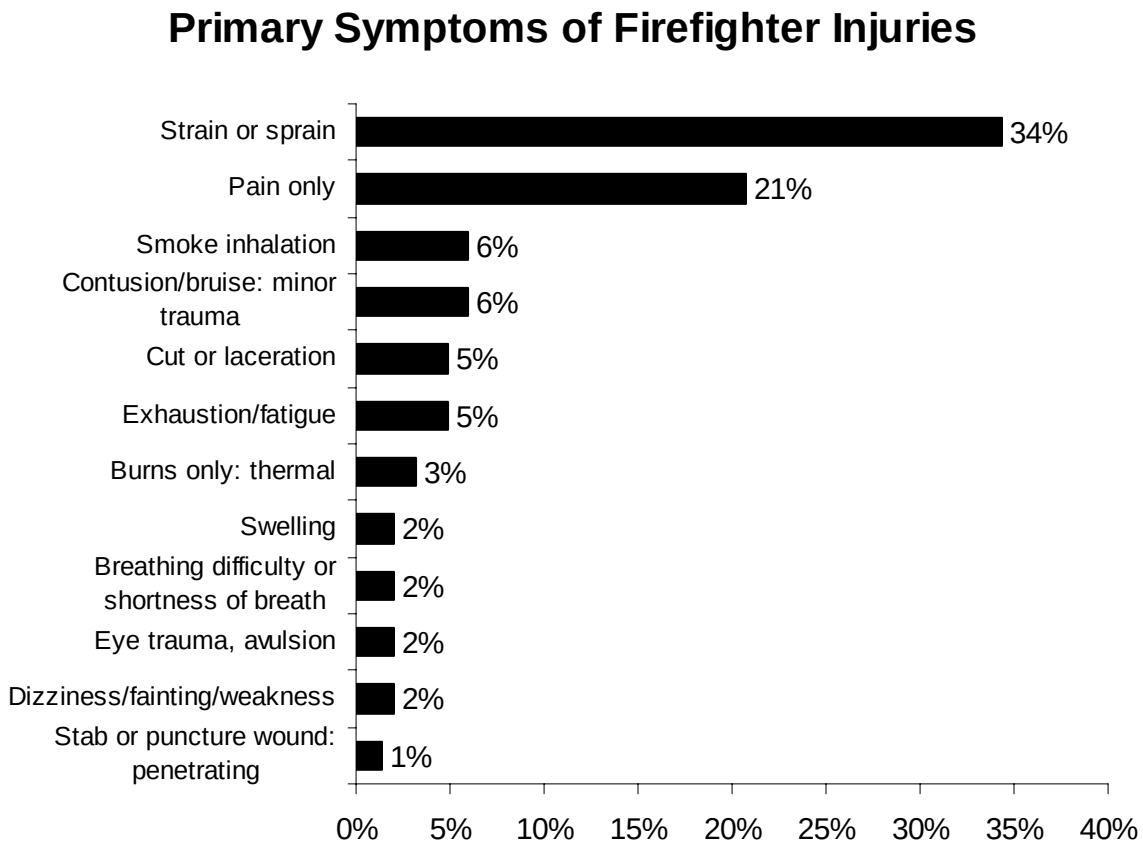
Over 1/3 of Injuries from Overexertion or Strain

Thirty-four percent (34%), or over one-third, of the 610 firefighter injuries where cause is known were due to overexertion or strain; 20% were injured when they slipped or tripped; 14% were exposed to some form of hazard including heat, smoke or toxic agents; 10% of firefighters were injured from falls; another 10% were caused by contact with some object; 7% were injured when they were struck or assaulted by a person, animal or



object; 1% were injured when they jumped; and 4% of the Massachusetts fire service injuries were caused by other conditions where no code was available to describe the situation. The cause was not reported or undetermined for 65 firefighter injuries, and these injuries were excluded from the percentage calculations.

Over 1/3 Experienced Sprains or Strains; 21% of Firefighters Reported Pain
Of the 628 firefighter injuries where primary symptom was known, more than one-third, 34%, of injured firefighters reported sprains or strains as their primary symptom; 21% reported pain only; 6% reported smoke inhalation; another 6% reported contusions or bruises; 5% reported lacerations or cuts; and another 5% reported exhaustion and fatigue. Thermal burns caused 3% of firefighter injuries. Swelling, breathing difficulty and dizziness, eye trauma, and fainting or weakness each caused 2% of these injuries. Puncture or penetrating wounds caused 1% of firefighter injuries in Massachusetts in 2007. Primary apparent symptom was undetermined or not reported for 47 firefighter injuries. These injuries were excluded from the percentage calculations.



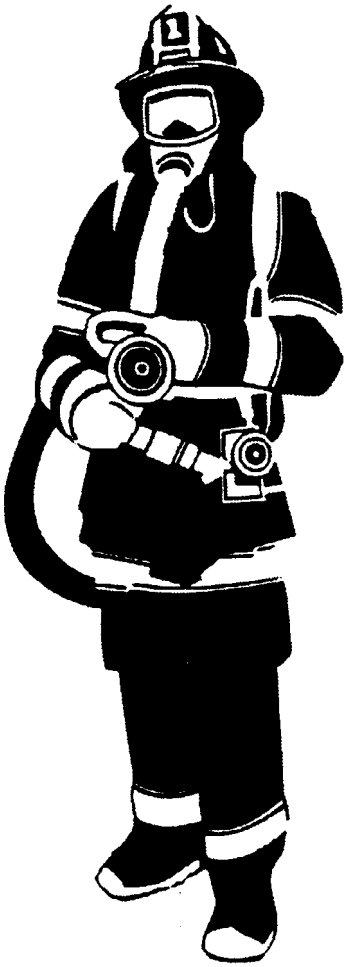
Firefighters Face Other Risks in Addition to Fires
The Massachusetts Fire Incident Reporting System (MFIRS) primarily only collects information about injuries at fires. Firefighters face many other dangerous situations in addition to those found at fires. Many are also injured while controlling hazardous

materials incidents, performing rescues and extrications, performing emergency medical services, investigations, inspections and other activities.

Look at Symptoms Incurred by Different Parts of Body to Prevent Injuries
Different parts of the body suffer different types of injuries. The following chart shows the types of injuries suffered by different parts of the body. For example, 33% of eye injuries were caused by avulsions; cuts or lacerations caused 35% of the injuries to the hands and fingers; 56% of the injuries to the back and spine were sprains or strains; and smoke inhalation caused 49% of the internal injuries.

Firefighter Injuries by Part of Body

Eyes (27)	
Avulsion	33%
Pain only	19%
Trunk (127)	
Strain or sprain	41%
Pain only	29%
Thermal burns	7%
Internal (57)	
Smoke inhalation	49%
Exhaustion/fatigue	12%
Breathing difficulty	9%
Dehydration	5%
Hand, Fingers (55)	
Cut, laceration	35%
Puncture wound	11%
Strain or sprain	11%
Legs (19)	
Pain only	42%
Strain or sprain	26%
Contusion, bruise	21%



Ears & Face (5)	
Thermal burns	60%
Contusion, bruise	20%
Back & Spine (93)	
Strain or sprain	56%
Pain only	32%
Arm (27)	
Strain or sprain	44%
Pain only	26%
Contusion, bruise	15%
Wrist (21)	
Pain only	38%
Strain or sprain	33%
Knee (69)	
Strain or sprain	65%
Pain only	17%
Foot & Toes (10)	
Strain or sprain	40%
Pain only	20%

21% of All Firefighter Injuries Were To the Trunk Part of the Body
Over one-fifth of all firefighter injuries were to the trunk part of the body. One hundred and twenty-six (126), or 21%, of all known firefighter injuries occurred to firefighters' trunks. Fifty-two (52), or 41% of these injuries were from strains or sprains and 37, or 29%, were only reports of pain. The chart below shows the distribution of firefighter injuries by body part. The percentages given are the ratio of the number of reported primary apparent symptoms for each given body part grouping.

3-Alarm Fire in Chelsea Injures 9 Firefighters – Most Fire Service Injuries

- On April 16, 2007, at 9:16 p.m., the Chelsea Fire Department was called to a fire in a three-unit apartment building of undetermined cause. The fire started on the second floor and spread to a nearby building. Three civilians were injured at this fire. All nine firefighters received injuries of strains and sprains, and smoke inhalation. Eight (8) of the nine injuries were only reported injuries and the other firefighter received first aid for smoke inhalation. Smoke detectors were present and alerted the occupants. The building was not sprinklered. Damages were estimated to be $340,000.

Fire in Milton Injures 9 Firefighters – Most Fire Service Injuries

- On September 17, 2007, at 2:53 p.m., the Milton Fire Department was called to a fire in a single-family home. The fire started on the first floor when an unclassified heat source was place too close to a wall. All nine firefighters received injuries to their trachea and lungs. All nine were only reported injuries where not even first aid was required. Smoke detectors were present but the fire was too small to activate them. No estimate was made as to the damages incurred by this fire.

3-Alarm Fire in Chelsea Injures 9 Firefighters – Most Fire Service Injuries

- On September 27, 2007, at 9:58 p.m., the Worcester Fire Department was called to a fire in a three-unit apartment building of undetermined cause. The fire started on an exterior stairway. Nine (9) firefighters were injured battling this fire. Five (5) of the injuries were severe, three were moderate in severity and one was a report of only pain. One (1) civilian died in this fire. Detectors were present and alerted the occupants. The building was not sprinklered and damages from this fire were estimated to be $275,000.

Worcester and Newton also had incidents with eight firefighter injuries; and Chelsea had two incidents with seven firefighter injuries in 2007.

Arson Fires

1,213 Arsons - 344 Structures, 130 Vehicles, 739 Other Arsons
One thousand two hundred and thirteen (1,213), or 4%, of the 33,522 fire incidents reported to the Massachusetts Fire Incident Reporting System, were considered to be intentionally set, or for the purpose of analysis, arson[56]. The 344 structure arsons, 130 motor vehicle arsons, and 739 outside and other arsons caused 12 civilian deaths, accounting for 20% of civilian fire deaths, 25 civilian injuries and 32 fire service injuries. The estimated dollar loss from arsons was $14.8 million. The average dollar loss per arson fire was $12,216. Total arson was down 4% from 1,264 in 2006.

'Suspicious' Eliminated as a Cause of Ignition
In version 5, arson is defined as Cause of Ignition is intentional and the age of the person involved is greater than 17, whereas in version 4 we included both intentionally set and suspicious fires in our definition of arson. In version 5, suspicious is eliminated, and the more accurate description Cause of Ignition = Cause Under Investigation is used.

1,373 Fires with Cause Still Under Investigation
In 2007, 1,373 Massachusetts fires were still listed as Cause Under Investigation. There were 2,624 fires where the Cause of Ignition was listed as Undetermined. In the past (in version 4) many of these fires would have been coded as 'Suspicious' and would have been counted as arsons. The change in coding requirements created a substantial drop in reported arsons. However, after five years with the new system, the number of reported arsons continues to decrease at a slower rate. It is important that fire departments update their fire incident reports when either a cause is determined or its cause is deemed to be undetermined after investigation.

Rubbish Fires Collect No Causal Data
Another reason for this large drop is that in version 5, outside rubbish fires such as dumpster fires and confined indoor rubbish fires use the abbreviated reporting format where a Fire Module is not needed and the field Cause of Ignition is not captured. Thus many intentionally set rubbish fires will not be counted as arsons or juvenile-set fires.

Arson Module Will Bring Better Understanding & Tracking of Arsons
The Arson Module contains data fields that we can use to identify when and where the crime takes place, what form it takes, and the characteristics of its targets and perpetrators. With this information we can develop and implement arson prevention initiatives and track trends to see if any arsons in an area exhibit similar characteristics.

[56] In MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

One of the new fields is 'Other Investigative Information.' This field identifies other information pertinent to the case. In 2007, 35%, of the 103 reported arsons which had this field completed, occurred in vacant structures; 15% were reported to have criminal or civil actions pending; 15% had some code violations; 11% had some other crime involved; 10% occurred in structures that were for sale; 8% reported financial problems; 6% were involved with some illicit drug activity; and 2% had a recent change in insurance.

Suspected Motive

Another field is 'Suspected Motivation Factors.' It indicates the suspected stimulus that caused the subject to burn any real or personal property. In 41% of the 142 reported arsons that had this field completed, the motive was thought to be from playing with fire or curiosity of fire. Thrills was suspected in 15% of these arsons; in 13% the motive was for personal motivation; in 6% it was an act of domestic violence; in 4% the arsonist was attempting to intimidate someone; in 3% someone was looking for attention or sympathy; in 3%, the arson was an attempt at auto theft concealment; the arsonist was believed to be committing suicide in 3% of these arsons. Homicide, institutional grudges or vanity were each the suspected motivation factor in 2% of arsons. An attempt to conceal a burglary, civil unrest, a hate crime, and a protest were each the suspected motivation factor in 1% of arsons.

Incendiary Devices

Gasoline or other fuel cans were the leading container of incendiary devices. Ordinary combustibles such as paper and wood, and ignitable liquids were the leading fuels of reported incendiary devices.

The following table shows the total number of reported arsons for the past 10 years. The total is then broken down into total number of reported structure, vehicle and all other types of arsons along with that subtotal's percentage of the total number of arsons. It also illustrates that all types of arsons, structure, motor vehicle and outside and other arsons are at an all time low.

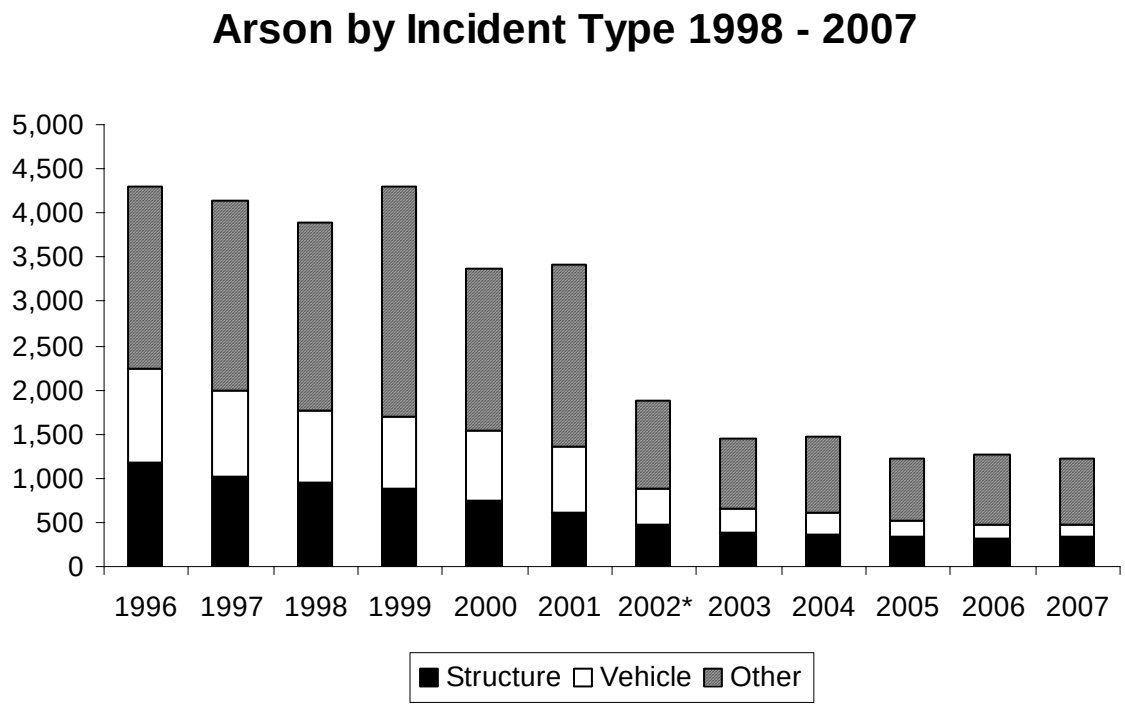
ARSONS BY YEAR

Year	Total Arsons	Structure Arsons	% All Arsons	Vehicle Arsons	%All Arsons	Other Arsons	% All Arsons
2007	1,213	344	28%	130	11%	739	61%
2006	1,265	325	26%	159	13%	781	62%
2005	1,234	343	28%	184	15%	707	57%
2004	1,477	373	26%	227	15%	877	59%
2003	1,491	381	26%	280	19%	830	56%
2002*	1,867	488	26%	395	21%	991	53%
2001	3,426	620	18%	743	22%	2,063	60%
2000	3,360	747	22%	798	24%	1,815	54%
1999	4,307	886	21%	818	19%	2,603	60%
1998	3,882	939	24%	836	22%	2,107	54%

*2002 was the 1st full year of version 5 with a new definition of arson with 'suspicious' eliminated.

Largest Reduction in Motor Vehicle Arsons

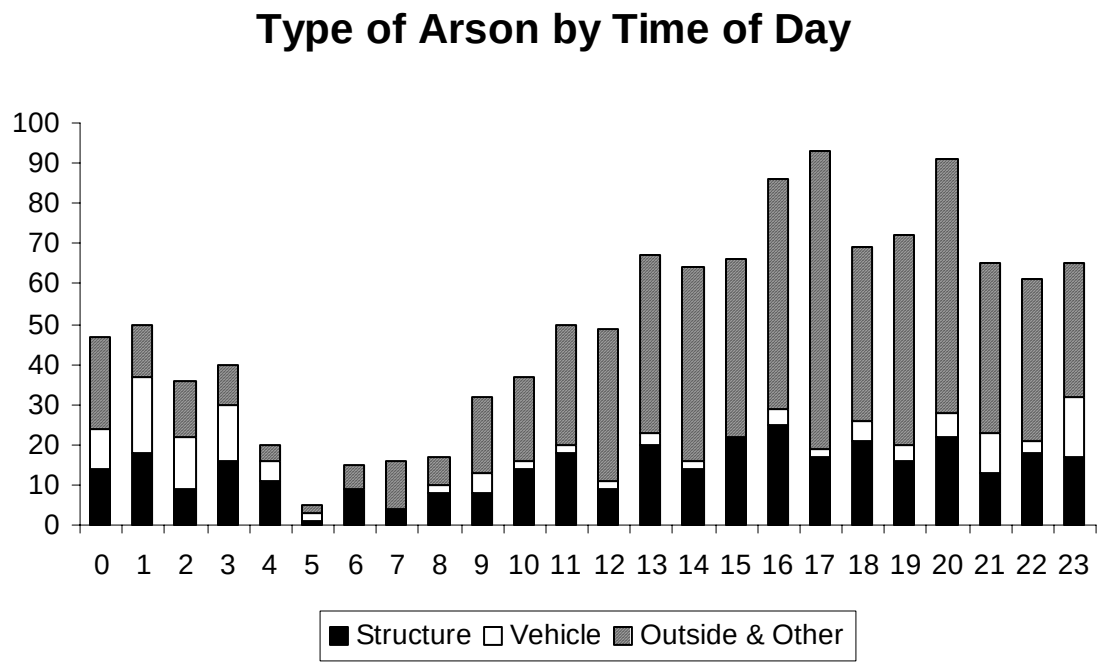
The following chart illustrates arson by incident type over the past decade. This type of chart can be used as a visual representation of the ratios between the three types of arson, structure, motor vehicle and outside and other arsons. The trend has been for motor vehicle arsons to comprise a smaller percentage of total arsons, while the percentage of outside and other arsons of total arsons has risen during the same time span. For example, motor vehicle arsons accounted for 24% of arson fires in 1997 but only 11% of the total reported arson fires in 2007. Looking at these ratios allows one to more clearly identify specific fire problems, such as increases in structure or motor vehicle arsons. Trends may be masked if you were to look just at total numbers.



*2002 was the 1st full year of version 5 with a new definition of arson with 'suspicious' eliminated.

For instance, outside and other arsons numbered 2,132 in 1997 and 739 in 2007. While we have a huge drop in the total numbers of reported outside and other arsons, the ratio or percentage of outside and other arsons to total arsons has remained at or above 50%.

The following chart illustrates the types of arsons by the time of day they occur. Midnight to 1:00 a.m. is represented by 0, 1:00 a.m. to 2:00 a.m. is represented by 1, etc. Arson is most likely to occur between the hours of 1:00 p.m. to 10 p.m. The peak times for structure arson were from 1:00 p.m. and 6:00 p.m. Motor vehicle arsons were most likely to occur between 10:00 p.m. and 3:00 a.m. Outside and other arsons peaked from 2:00 p.m. to 8:00 p.m.



Structure Arson

344 Arsons, 7 Civilian Deaths, 21 Civilian Injuries, 28 Fire Service Injuries
In 2007, there were 344 reported structure arsons. They caused seven civilian deaths, 21 civilian injuries, 28 fire service injuries and an estimated dollar loss of $14.1 million. These 344 incidents accounted for 2% of the 16,722 structure fires in 2007, up 6% from the 325 reported structure arsons in 2006.

The seven civilian deaths accounted for 11% of the total civilian death count and 15% of all structure fire deaths. The 21 civilian injuries accounted for 5% of the overall civilian injuries and 6% of all civilian injuries at structure fires. Twenty-eight (28) fire service injuries accounted for 4% of the total fire service injuries and 5% of the injuries fire fighters sustained at all structure fires in 2007. The estimated dollar loss for structure arsons was $14,108,853, accounting for 5% of the overall dollar loss and 5% of the estimated dollar loss in all reported structure fires. The average loss per structure arson was $41,014.

In 2007, 695 Massachusetts structure fires were still listed as Cause Under Investigation. There were 520 structure fires where the Cause of Ignition was listed as Undetermined. In the past (in version 4) many of these fires would have been coded as ‘Suspicious’ and would have been counted as arsons. The change in coding requirements did create a decrease in reported structure arsons.

Building Arsons
In 2007 there were 343 building arsons. These 343 arsons accounted for 99% of all the structure arsons in Massachusetts. These 343 building arsons caused seven civilian deaths, 21 civilian injuries, 28 fire service injuries and an estimated dollar loss of $14.1 million.

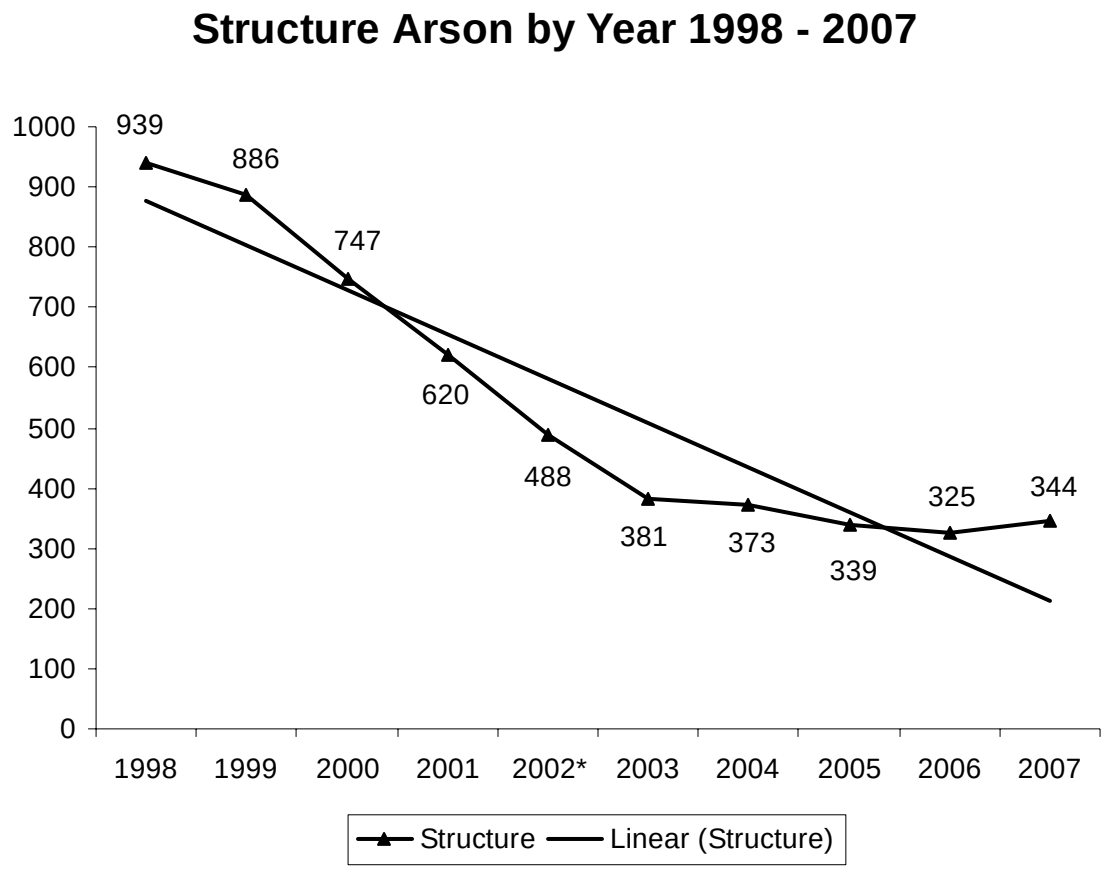
58% of Building Arsons Occurred in Residences
One hundred and ninety-eight (198), or 58%, of the 305 structure arsons occurred in residential occupancies. Educational occupancies accounted for 31, or 9%, of the 343 building arsons in 2007. The following table shows the number of structure arsons, civilian deaths, civilian injuries, fire service injuries, dollar loss and the percentage of the total structure arsons for each occupancy type.

BUILDING ARSON BY OCCUPANCY TYPE

Occupancy	Building Arsons	Percent of Total	Injuries FF	Injuries Civ	Deaths FF	Deaths Civ	Dollar Loss
Assembly	16	5%	1	0	0	0	$503,900
Educational	31	9%	0	0	0	0	87,910
Institutional	19	6%	0	0	0	0	26,000
Residential	**198**	**58%**	**25**	**18**	**0**	**4**	**11,201,558**
1- & 2-Family	*96*	*28%*	*12*	*9*	*0*	*4*	*3,006,498*
Multifamily	*85*	*25%*	*11*	*9*	*0*	*0*	*7,932,325*
All Other Residential	*13*	*4%*	*0*	*0*	*0*	*0*	*252,435*
Mercantile, business	24	7%	0	2	0	2	952,000
Basic Industry	3	1%	0	0	0	0	0
Manufacturing	4	1%	0	0	0	0	80
Storage	20	6%	2	0	0	1	1,317,284
Special Properties	28	8%	0	1	0	0	11,401
Unclassified	0	0%	0	0	0	0	0
Total	**343**	**100%**	**28**	**21**	**0**	**7**	**$14,100,853**

Structure Arson Down 63% Since 1997
Structure arson has been on a downward trend since 1991 when 1,974 structure arsons were reported to MFIRS[57]. Structure arsons have decreased 63% since 939 were reported in 1998. The chart below shows the trend of structure arsons in the past decade.

[57] The highest number of reported structure arsons in the past 25 years, occurred in 1984 when 2,133 structure fires were considered to be intentionally set.



*2002 was the 1st full year of version 5 with a new definition of arson with 'suspicious' eliminated.

The following table shows the cities that reported the most structure arsons in 2007, their 2000 population according to the United States Census, the number of structure arsons reported in 2007, the rate of structure arsons per 1,000 people in 2007, and the same information for 2006. The cities are ranked by the 2007 rate of arsons per 1,000 population. Cities with the most structure arsons may not have the highest rate of structure arsons.

The City of Boston, as the largest city in the Commonwealth, leads the state in the number of structure arsons, the Town of Walpole had a higher structure arson rate[58]. Although the Town of Walpole ranked 8th in total structure arsons, its rate of 0.39 structure arsons per 1,000 population was the highest in the state and was seven times the state structure arson rate of .05 per 1,000 population.

[58] Seven of the nine structure arsons occurred at MCI Cedar Junction.

MASSACHUSETTS CITIES WITH THE MOST STRUCTURE ARSONS IN 2007

City	Population	2007 Arsons	2007 Rate/ 1,000 Pop.	2006 Arsons	2006 Rate/ 1,000 Pop.
Walpole[59]	22,824	9	0.39	6	0.26
Chelsea	35,080	11	0.31	6	0.17
Everett	38,037	8	0.21	4	0.11
Pittsfield	45,793	8	0.17	5	0.11
Lawrence	72,043	12	0.17	5	0.07
Fall River	91,938	13	0.14	24	0.26
Brockton	94,304	13	0.14	6	0.06
Fitchburg	39,102	5	0.13	1	0.03
Holyoke	39,838	5	0.13	2	0.05
New Bedford	93,768	11	0.12	8	0.09
Chicopee	54,653	5	0.09	5	0.09
Boston	589,141	53	0.09	46	0.08
Revere	47,283	4	0.08	6	0.13
Worcester	172,648	13	0.08	12	0.07
Massachusetts	**6,349,097**	**344**	**0.05**	**373**	**0.06**

Motor Vehicle Arson

130 Arsons, 3 Civilian Deaths & $602,265 in Damages

One hundred and thirty (130), or 4%, of the 3,317 vehicle fires were considered intentionally set in 2007. The three civilian deaths accounted for 5% of the total civilian deaths and 30% of the civilian deaths associated with motor vehicle fires. The were no injuries or firefighter deaths associated with motor vehicle arsons in 2007. The estimated dollar loss in motor vehicle arsons was $602,265, accounting for less than 1% of the overall fire dollar loss and 4% of the dollar loss associated with all the 2007 motor vehicle fires. The average loss per vehicle arson was $4,633. Passenger cars and vans accounted for 86% of the 130 motor vehicle arsons.

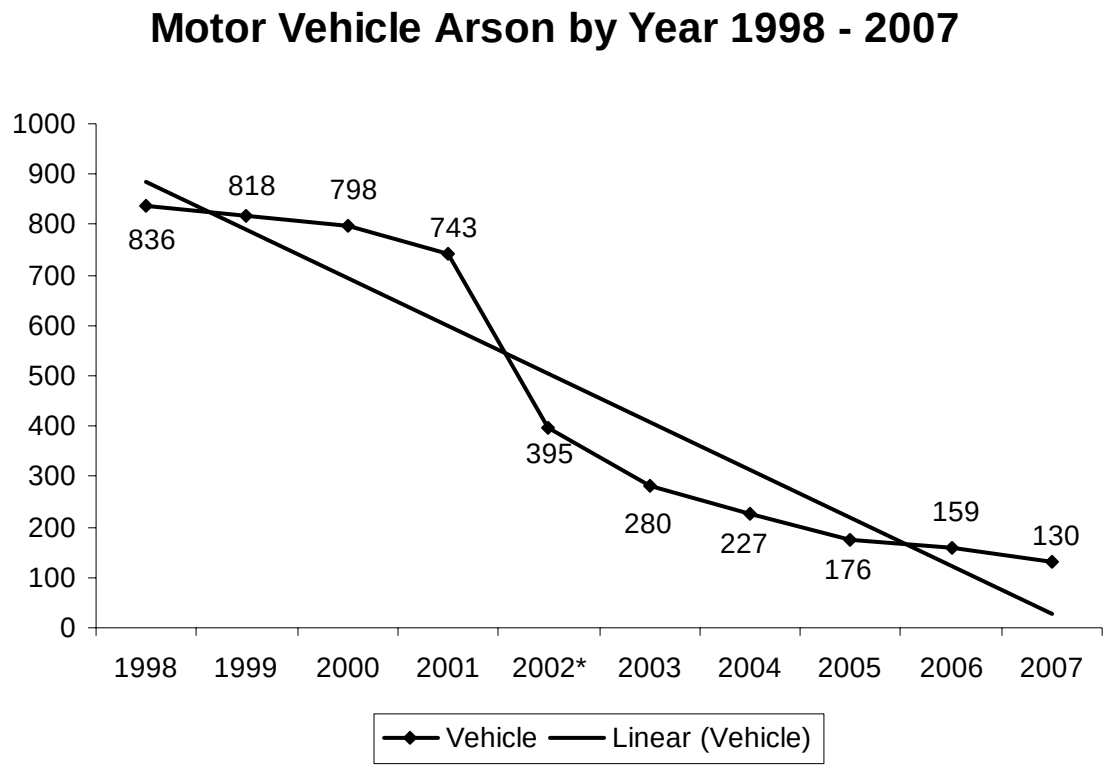
In 2007, 375 Massachusetts motor vehicle fires were still listed as Cause Under Investigation. There were 730 motor vehicle fires where the Cause of Ignition was listed as Undetermined. In the past (in version 4) many of these fires would have been coded as 'Suspicious' and would have been counted as arsons. The change in coding requirements did create a large drop in reported motor vehicle arsons; and the declining trend has continued during the past five years using the new coding format.

The Burned Motor Vehicle Reporting Law

The Massachusetts Fire Incident Reporting System first identified motor vehicle fires and motor vehicle arson as a major problem in 1985 and the Burned Motor Vehicle Reporting

[59] 7 of these structure arsons in Walpole occurred at MCI - Cedar Junction.

Law took effect in August of 1987. The law requires owners of burned motor vehicles to complete and sign a report that must also be signed by a fire official from the department in the community where the fire occurred. The graph below shows the effectiveness of this law. Since the law took effect in 1987, motor vehicle arsons have decreased 97% from 5,116 in 1987 to 130 in 2007.



*2002 was the 1st full year of version 5 with a new definition of arson with 'suspicious' eliminated.

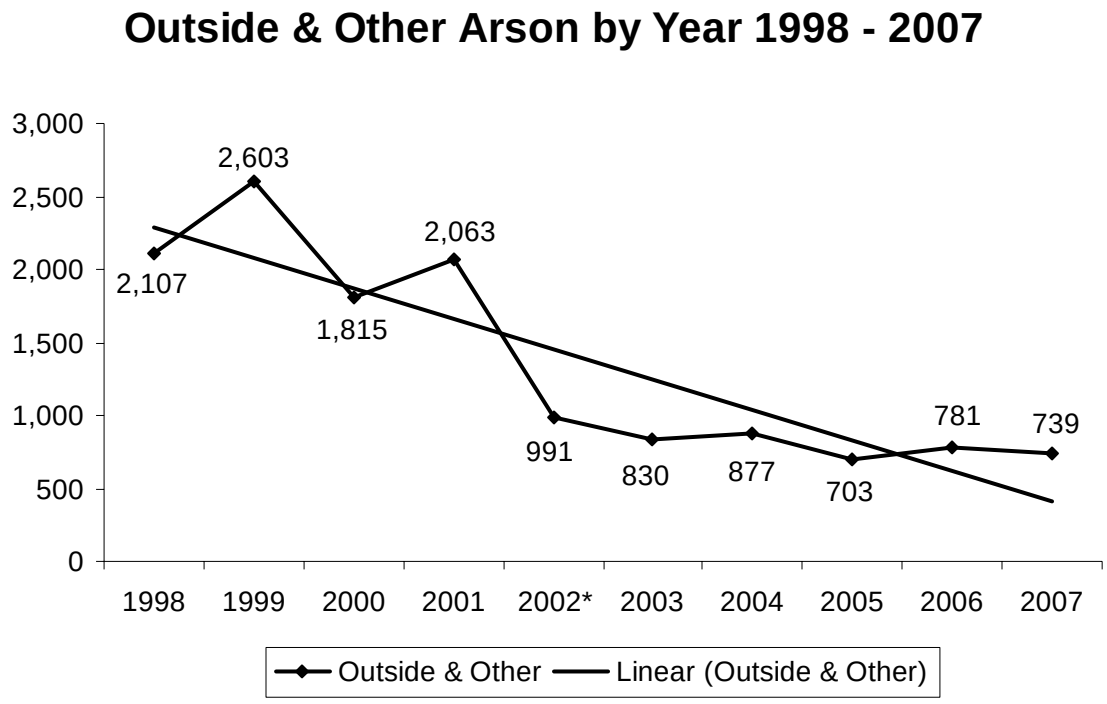
Outside and Other Arson

739 Arsons, 2 Civilian Deaths, 4 Civilian Injuries & 4 Fire Service Injuries
Seven hundred and thirty-nine (739), or 5%, of the total outside and other fires were considered intentionally set in 2007. The two civilian deaths accounted for 3% of the overall civilian deaths and 50% of the outside and other fire deaths. The four civilian injuries in outside and other arson fires accounted for 1% of the total civilian injuries and 10% of civilian injuries in all outside and other fires. The four fire service injuries accounted for 1% of the total fire service injuries and 4% of firefighter injuries associated with outside and other fires. The estimated dollar loss for these arsons was $106,575. The average loss per outside and other arson was $144.

In 2007, 303 outside and other fires were still listed as 'Cause Under Investigation.' There were also 2,237 outside and other fires where the "Cause of Ignition" was listed as 'Undetermined.' In the past (in version 4) many of these fires would have been coded as 'Suspicious' and would have been counted as arsons. The change in coding requirements did create a large drop in reported outside and other arsons but the declining trend has continued during the past five years using the new coding format.

No Causal Data for Outside Rubbish Fires

Another reason for this large drop is that in version 5, outside rubbish fires such as dumpster fires use the abbreviated reporting format where a Fire Module is not needed and the field Cause of Ignition is not captured. Thus many intentionally set outside rubbish fires will not be counted as arsons.



*2002 was the 1st full year of version 5 with a new definition of arson with 'suspicious' eliminated.

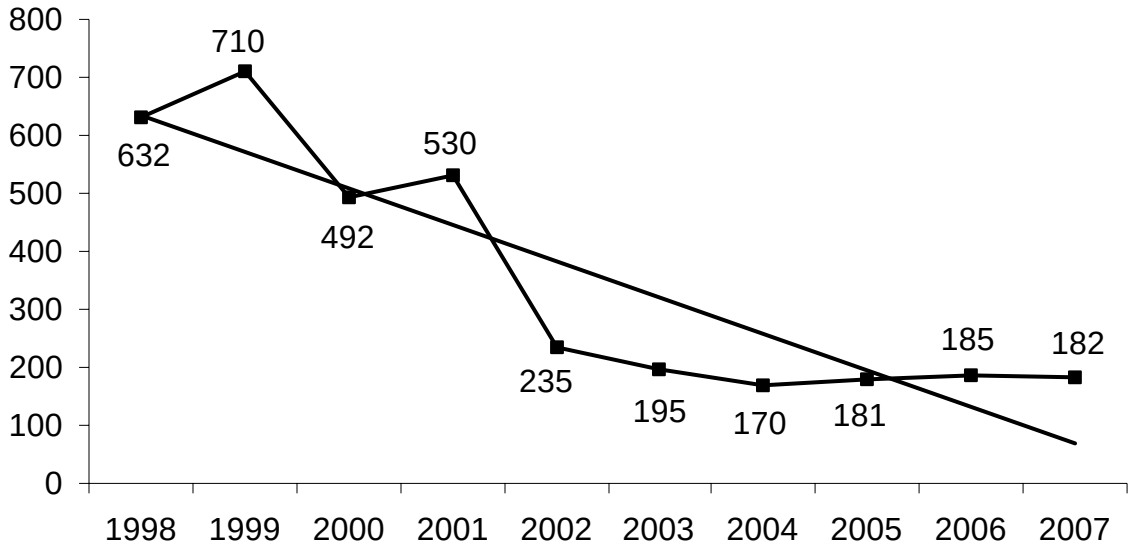
It is important to keep in mind that no-loss fires are voluntarily reported and these numbers represent only a fraction of the problem.

Juvenile-set Fires

Children Playing With Fire Caused 182 Fires, 11 Civilian Injuries & $3.2 Million

In 2007, children playing with matches, lighters and other heat sources caused 182 reported fires, 11 civilian injuries, 14 fire service injuries and an estimated dollar loss of $3.2 million. The average dollar loss per fire was $17,447. These fires were down 2% from 185 incidents in 2006. This continues the overall declining trend over the past decade. We expected the number of juvenile-set fires to increase in 2002 with the implementation of v5 and our increased ability to capture these incidents. This makes the overall drop all the more remarkable.

Juvenile-Set Fires In Massachusetts 1998 - 2007



Version 5 Giving Us A Better Understanding of the Problem

Prior to 2001, you could not code a fire as suspicious or incendiary and also as juvenile-set. The fire department may have considered a fire deliberately set by a juvenile or a group of children to be incendiary; these statistics should be considered an underestimate of the severity of the juvenile firesetting problem. The current reporting system is able to capture these types of incidents by allowing the recording of multiple causal factors. The Arson/Juvenile Firesetting Module can collect information when a fire is intentionally set by an adult or set by a child. The information that can be collected about juvenile firesetters includes age, race, family type, gender and ethnicity. Also included will be the motivation and risk factors associated with firesetting, for example, if there is a history of shoplifting, stealing, physical assault, fire play, transiency, etc.

The second half of the Arson Module is the Juvenile Firesetter[60] Module. This module contains many data fields that we can use to identify key items of information that could be used for local, state and national intervention programs. With this information we can develop and implement juvenile firesetting prevention initiatives and track trends to see if they exhibit similar characteristics.

Over 3/4 of Juvenile Firesetters Were Male

Other than identify the age, gender and race of the subject, one of the new fields is called Motivation Risk Factors. It is an attempt to identify the possible motivation for the subject to burn, or attempt to burn, any real or personal property. The leading Motivation Risk Factors reported to MFIRS in 2007 was a mild curiosity about fire. The leading family type was a two-parent family followed by single-parent family. When age was given, the majority of the subjects were between 12 and 17 years old. When gender was completed 79% of the children were listed as males.

93 Structure Fires – 1 Motor Vehicle Fire – 88 Outside & Other Fires

The 182 fires set by children included: 93 structure fires; 63 brush, tree or grass fires; 12 special outside fires; six outside rubbish fires; one motor vehicle fires; and seven fires that could not be classified further.

Juvenile-set Structure Fires Cause 9 Civilian Injuries & $3 Million in Damages

Nine (9) civilian injuries and 13 fire service injuries occurred in the 93 structure fires set by children. Child-set structure fires caused an estimated dollar loss of $3 million with an average dollar loss of $32,544 per fire.

Thirty-eight percent (38%) of the 86 building fires caused by children occurred in one- or two-family homes; 24% occurred in multifamily homes; and 9% occurred in high schools, junior high schools or middle schools. Thirty-three percent (33%) of the juvenile-set fires started in the bedroom; 14% started in the bathroom; and 8% began in the kitchen.

59% of Structure Fires Set by Children Using Smoking Materials

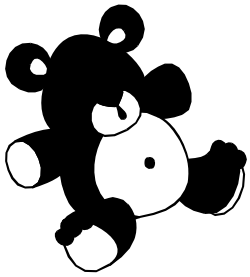
Fifty-nine percent (59%), of juvenile-set fires were started by smoking materials[61]. Thirty-three percent (33%) of the structure fires set by children were started with lighters. Twenty-five percent (25%) of the structure fires were started using matches. One percent (1%) was caused by unspecified smoking materials. Unclassified open flames were the heat source for 8% of juvenile-set fires in 2007. Seven percent (7%) of the juvenile-set structure fires were started by fireworks. Candles started 4% of these fires. and 3% involved unclassified hot or smoldering objects. This demonstrates a need for education

[60] Each juvenile-firesetter is assigned a unique number for that particular incident. No other personal identification information for juvenile firesetters is recorded on an MFIRS report.

[61] Smoking materials includes cigarettes, pipes, cigars, cigarette lighters, matches, and heat from unspecified smoking materials.

to both parents and children on the danger of matches and lighters, the use of illegal fireworks and safer candle use.

Children Playing with Lighter Set Warehouse Ablaze



- On November 27, 2007 at 6:57 p.m., the Ayer Fire Department was called to a fire in a warehouse caused by a 14-year old boy and a 12-year old boy playing with a lighter. They initially ignited a book and the fire spread to the entire building. No one was injured at this fire. Detectors were not present. There building was not sprinklered. Damages were estimated to be $600,000. This was the largest loss juvenile-set fire in Massachusetts in 2007.

Parents and Caregivers Must Protect Children from Themselves

Parents and caregivers must take steps to protect their children from the dangers of fire.

- Make sure that all matches and lighters are stored out of children's reach.
- If you need a lighter, buy one that is child resistant. Since, 1994, all disposable butane lighters and most novelty-lighters must be able to resist the efforts of 85% of children under five who tried to operate them in a specified test. Some are easier to use than others. If one brand is cumbersome, switch to another. *Do not disable the child-resistant feature.*

- Supervise young children at all times. Teach children the safe uses of fire, such as birthday candles and barbecuing. When a child is old enough, let him or her light the candles while you watch. It is only safe for children to use fire when adults are present.
- If your child seems overly curious about fire or has set a fire, call your local fire department and ask if they have a juvenile firesetting intervention program. Don't assume the child will 'grow out of it.' Juvenile firesetting is dangerous and must be addressed.
- Smoking parents should keep their lighter on their person at all times, not on the table or in a purse.
- Fireworks are illegal in Massachusetts. Adults should leave the fireworks to the professionals in order to protect everyone's children

Child Playing with Lighter Causes Most Juvenile-Set Fire Injuries

- On February 10, 2007, at 4:25 p.m., the Boston Fire Department responded to a juvenile-set fire in a 14-unit apartment building. A child playing with a lighter ignited various items inside a closet. The fire spread to the adjoining room, but firefighters stopped it there. Three children six and under were injured in this fire along with two firefighters. Detectors were present and operated. The building did not have any sprinklers. Damages were estimated to be $50,000.

Cooking Fires

Cooking Caused 8,791 Fires &1 Civilian Death & 87 Civilian Injuries
Unattended cooking, other unsafe cooking practices and defective cooking equipment caused 8,791 fires, one civilian death, 87 civilian injuries, 47 firefighter injuries and an estimated dollar loss of $9.2 million. The average dollar loss per fire was $1,048. Cooking fires accounted for 26% of the total 33,522 fires that occurred in 2007.

Ninety-nine percent (99%) of the fires caused by cooking occurred in structures. The 8,791 fires included: 8,699 structure fires; 49 special outside fires; two motor vehicle fires; one brush fire; one outside rubbish fire; and another 39 fires that could not be classified further.

Confined Cooking Fires Account for Almost 1/4 of Total Fires
There were 8,199 cooking fires confined to a non-combustible container. These 8,199 fires represent 24% of the total 33,522 fires that occurred in Massachusetts in 2007. This is the largest single cause of fires in Massachusetts. These fires are also an 8% increase over the 7,560 confined cooking fires that were reported in 2006.

82% of Cooking Fires Were Unintentional
In 930, or 82% of the 1,139 cooking fires where the 'Cause of Ignition' was reported, it was reported as unintentional. Six percent (6%) of these fires were the result of a failure of equipment or heat source. Only 2% of the reported cooking fires were classified as intentional. In 7% of cooking fires, the cause of ignition was undetermined. Seven thousand six hundred and fifty-two (7,652), or 86%, of all cooking fires, were fires contained to non-combustible containers that did not have a cause reported.[62]

Unattended Cooking Starts 16% – Stand by Your Pan!
Human error was responsible for the majority of cooking fires. Sixteen percent (16%) of cooking fires where Factors Contributing to Ignition was completed were caused by unattended cooking; 5% were caused by the misuse of materials or product; 5% were caused by combustibles left too close to the cooking equipment; 4% of the fires started because the cooking equipment had not been cleaned; 3% started when the equipment was accidentally turned on or not

[62] In version 5, a fire contained to a non-combustible container has a special incident type code. If one of these codes is used then only a Basic Form is completed and the Cause of Ignition field on the Fire Module does not have to be populated. A fire department may still elect to complete the Fire & Structure Fire Modules and all associated fields if it wants to. In 2007, there were 8,199 confined cooking fires. However fire departments filed a Fire Module in 547, or 7%, of these incidents.

turned off; and another 3% were caused by abandoned or discarded cooking materials. Eighty-seven percent (87%) of cooking fires were confined fires where this data is not collected.

Cooking Was the Leading Cause of Injury in Fires in 2007
Cooking was the leading cause of injury in fires in 2007. This is not surprising considering that over one-half, or 58%, of residential fires start in the kitchen. Of the 88 cooking fire injuries, 56% of victims were male and 44% were female. Five percent (5%) of victims were under age 10; none of the victims were between the ages of 10-14; 11% were 15-24; 13% were 25-34; 16% were 35-44; 23% were 45-54; 10% were 55-64; 10% were 65-74; 5% were 75-84 and 5% were over the age of 85. People aged 25 to 54 accounted for 51% of the people injured in cooking fires.

71% of Victims in Room or Area of Fire Origin
Of the 69 cooking fire injuries where location at ignition is known 71% of the victims were injured in the room or area of fire origin. Forty-one percent (41%) were intimately involved with the ignition; 30% of victims were in the room or space of fire origin but not involved; 14% were not in the area of origin but involved, most likely these are the people who initially left the cooking unattended; and 14% were not in the area of origin and not involved.

Over 1/2 of Cooking Injuries Occurred When Trying to Control Fire
Over one-half of cooking injuries occurred when trying to control the fire. Of the 65 cooking fire injuries for which activity at time of injury was known, 54% of victims were attempting to control the fire; of the 35 victims injured while attempting to control the fire, 63% were male. Nine percent (9%) were escaping; 5% were sleeping; 5% were attempting to return to the vicinity of the fire before the fire was under control; 3% acted irrationally; 2% were attempting a rescue; and 9% of the victims activities were classified as ‘Other’.

Over 1/2 of All Cooking Injuries Were Breathing Related
Stovetop fires tend to produce a lot of smoke and when people choose to attempt to extinguish them, they run the great risk of being overcome by toxic smoke. Of the 77 cooking fire injuries where nature of injury was known, 44% suffered only from smoke inhalation or breathing difficulty; 29% of victims suffered only from burns; 9% suffered from burns and asphyxia; 9% received scald burns; and 4% of cooking fire injuries were attributed each to cuts or lacerations.

1 Civilian and 2 Fire Service Fire Deaths in 2007
While cooking is the leading cause of residential building fires, it is not the leading cause of fire deaths or fatal fires. There was one civilian fire death and two fire service deaths attributed to cooking fires in 2007.

The importance of responding correctly to a clothing ignition – stop, drop and roll – cannot be overemphasized. Older adults, who often are more afraid of falling than of fire, are at the highest risk of being injured in a cooking fire. They must be persuaded that they

can indeed safely lower themselves to the ground and roll to smother the flames. They should also wear tight fitting clothes to keep from having their sleeves ignite while they are cooking.

- **Put a lid** on a grease fire to smother it then turn off the heat. Baking soda will also work.
- Wear short or tight fitting sleeves when cooking. Loose sleeves can easily catch fire.
- Never throw water on a grease fire. Water will only spread the fire around.
- Never move a burning pan. You can too easily ignite your clothes or spill the fire onto someone or something else.
- Stand by your pan! Never leave cooking unattended.
- Stop, drop and roll if clothing ignites, no matter how young or old.

Fires Caused by Smoking

Smoking Caused 6% of Fires and 31% of Deaths

During 2007, 2,097, or 6%, of the 33,522 reported incidents were caused by the improper use or disposal of smoking materials. These 2,097 fires caused 19, or 31% of the 61 civilian deaths and 17, or 36%, of the 47 structure fire deaths, 49 civilian injuries, 44 fire service injuries, and an estimated dollar loss of $22.7 million. The average dollar loss per fire was $10,803. The number of smoking fires increased by 38% from 1,520 in 2006 to 2,097 in 2007.

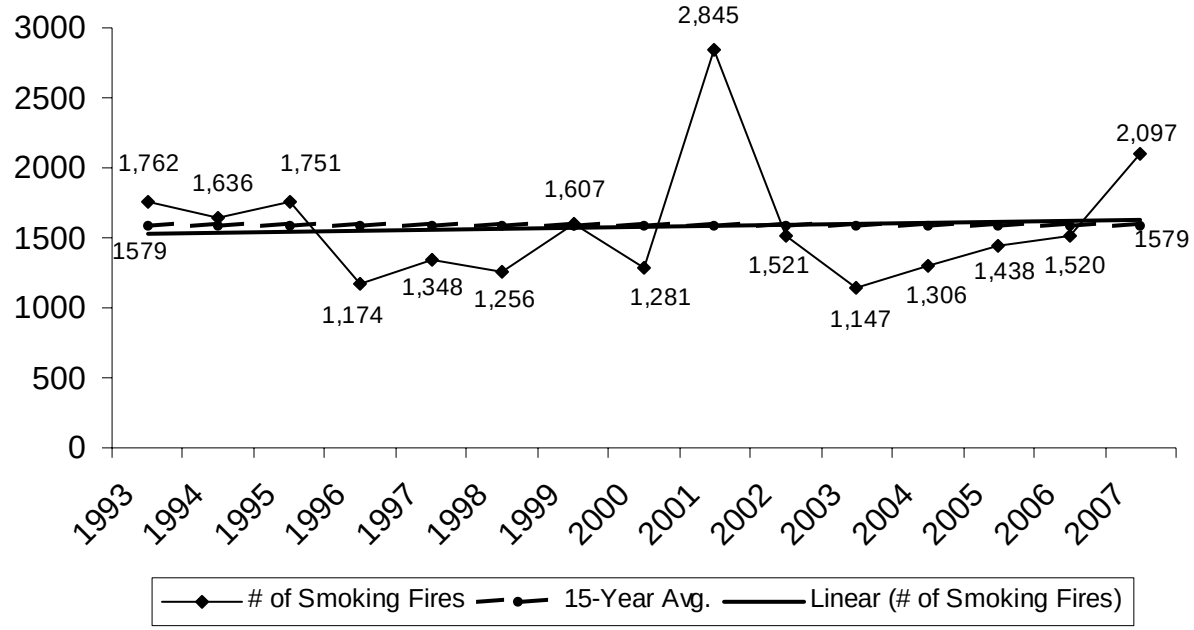
662 Structure Fires - Up From 542 In 2006

The 2,097 fires caused by smoking included: 662 structure fires, up from 542 in 2006; 44 motor vehicle fires, down from 54 in 2006; 1,113 tree, brush or grass fires, up from 705 in 2006; 86 trash or rubbish fires, down from 89 in 2006; 139 special outside fires, up from 94 in 2006; 23 cultivated vegetation or crop fires, up from seven in 2006, and 30 fires that could not be classified further, up from 29 in 2006. The total number of fires caused by smoking has increased by 577, or 38%, from 2006.

The largest increase came in brush fires, with an increase of 408, or 58%, from the 705 reported in 2006. The returns to the previous trend interrupted by 2006 where tree, brush or grass fires saw the largest increases.

Since 2004, smoking fires are have been on an increasing trend. Over the last 15-year period, smoking fires have had a slightly increasing trend.

Smoking Fires 1993 - 2007

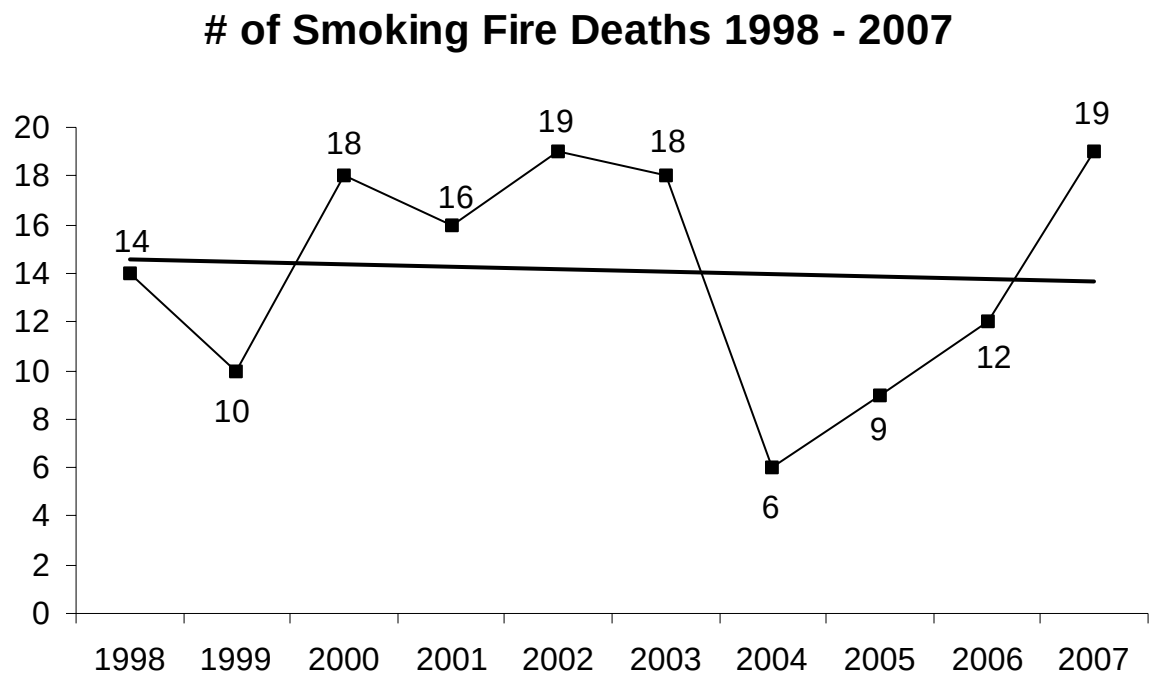


80% of All Smoking Building Fires Occurred in Residences
Eighty percent (80%) of all smoking-related building fires occurred in residential occupancies. The occupancies with the next highest percentages of smoking-related structure fires in Massachusetts in 2007 were mercantile and business properties accounting for 8% and public assembly properties accounting for 4%.

A reason for this is all of the new statutes that prohibit smoking in public places. These new laws have forced smokers to smoke outside where they may not be as careful disposing of their cigarettes or cigars. People are now more likely to smoke more heavily at home because it is one of the few 'sanctuaries' where they can partake in smoking.

Smoking is the Leading Cause of Fire Deaths
The 603 smoking-related structure fires caused 17 of the 19 smoking-related fire deaths, 42 civilian injuries, 37 fire service injuries, an estimated dollar loss of $22.4 million and an average dollar loss of $33,817. Smoking fires accounted for 41% of the fatal structure fires and 36% of structure fire deaths in 2007. The unsafe and improper use of smoking materials caused 43% of residential structure fire deaths and 45% of fatal residential structure fires. Nine (9), or 56%, of the 16 home fire deaths to seniors (over 65) was caused by smoking.

2007 is 35% Above the 10-Year Average of Smoking Fire Deaths
In 2007, 19 people died in smoking-related fires of all types. These 19 deaths are 35% above the 10-year average of 14 smoking-related fire deaths per year since 1998 and tied with 2002 as the most in a single year. After high-water marks of 19 deaths in 2002 and 18 deaths in 2003, smoking-related fire deaths dropped drastically. In 2004, six people died in smoking fires. In 2005, nine people died; and in 2006 12 people died in smoking-related fires of all types.



No Working Detectors in 20% of Fatal Smoking Fires
In three, or 40%, of fatal residential smoking fires, there were no working smoke detectors; in all three of these incidents occurred where smoke detectors did not operate. None of these deaths occurred where there was no detector present at all. Eight (8) smoking fatal fires occurred in a structure where smoke detectors were present and operated, however many of these victims were intimately involved with the ignition when they fell asleep while smoking. The smoke detectors helped prevent these fires from claiming any additional lives. In the four other fires, the smoking-related death occurred where smoke detector status was undetermined. In one incident the sprinklers activated in the room and kept the fire from spreading.

For a listing of all the smoking-related fire deaths in 2007, please refer to the *2007 Massachuestts Fire Deaths* section of this report.

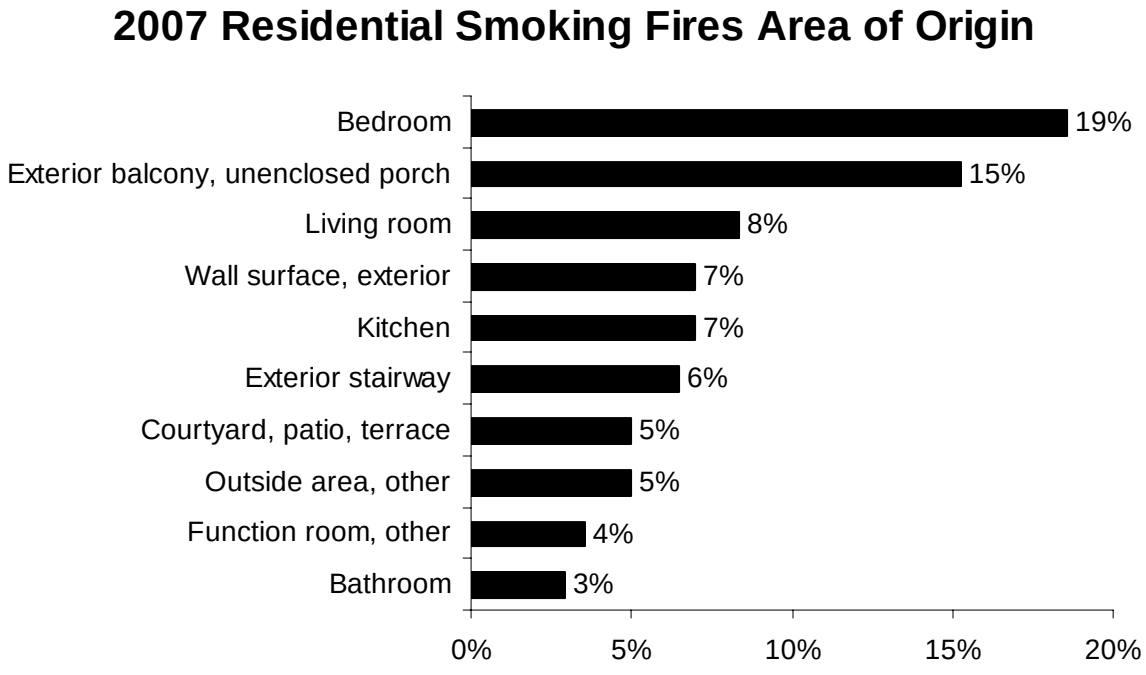
Smoking on Oxygen
Although the use of oxygen while smoking caused none of the smoking-related structure fire deaths in 2007, there were three known cases where it could have led to a more tragic

ending. Both the Gloucester and Norwood Fire Departments reported fires at homes where there was smoking while someone was using home oxygen. The Springfield Fire Department responded to Mercy Medical Center where a patient took off his oxygen mask and lit a cigarette starting a fire in his room.

80% of Building Smoking Fires Occurred in Residences
Of the 602 smoking-related building fires, 479, or 80%, occurred in residences. Smoke detectors operated in 42% of the smoking-related residential structure fires. Detectors were present but failed to operate in 7% of these incidents. No smoke detectors were present in 11% of these incidents. In 16%, the fire was too small to activate the smoke detector. It was undetermined if the detectors were present or if they operated in 24% of these fires.

43% of Smoking Fires in the Home Start in the Exterior
In 2007, an increasing trend continued. The number of exterior areas of origin in residential smoking fires increased. These exterior area of origins accounted for 207, or 43%, of all residential smoking fires. As more people are forced to smoke only in their own homes, many are forced to smoke outside the building in areas like exterior balconies or enclosed porches.

The leading areas of origin were bedrooms, where 19% of residential smoking fires occurred; exterior balconies or porches, where 15% of the fires occurred; living rooms, where 8% of the fires occurred; exterior wall surfaces, where 7% of the fires occurred; kitchens, where another 7% started; exterior stairways, where 6% started; courtyards, patios and terraces and unclassified outside areas where 5%each started; unclassified function rooms, were 4% started; and bathrooms where 3% of smoking fires started in homes.



Smoking Fires Ignite Rubbish, Bedding & Upholstered Furniture
The most common items first ignited by smoking fires in the home were upholstered furniture and bedding which combined accounted for 20% of these smoking fires. If smokers were using self-extinguishing cigarettes, many of these fires could have been avoided. Some tobacco companies have begun to sell self-extinguishing cigarettes in test markets. There is no federal standard for self-extinguishing cigarettes despite nearly 20 years of proposed legislation. The state of New York mandates that all cigarettes sold in New York are of the self-extinguishing type. Canada also has passed similar legislation in March of 2007. California and Vermont have also recently passed legislation for self-extinguishing cigarettes. In January of 2008, the Resistant Ignition Propensity (RIP) legislation or 'fire safe cigarette' law making it mandatory for cigarette manufacturers to start selling only the self-extinguishing type of cigarettes in Massachusetts takes effect.

Eleven percent (11%) of smoking fires ignited rubbish, trash or waste. Many more of these fires go unreported because of the confined indoor trash fires where the Fire Module does not have to be completed and therefore no causal information is collected. Also the new self-extinguishing cigarettes should have little or no impact on trash fires as they are not designed to immediately go out and will should still have enough heat to ignite these items.

Another safety aspect to think about is purchasing only upholstered furniture that meets the California flammability standard, because many smoking-related fires start by igniting upholstery.

Until they can quit, smokers should use deep ashtrays, store ashes in metal containers and never smoke in bed. Families should consider banning smoking inside the house for health and fire safety reasons. Children of smokers often have easy access to matches and lighters. Adults must keep these tools out of the reach of small children. If smokers are going to smoke on an exterior balcony, deck or porch, they should also be using an appropriate metal or other non-combustible container to collect the ashes and properly extinguish their smoking materials.

State and federal regulations require most children's sleepwear to be flame-retardant. However, no such requirements apply to adult clothing. Physically disabled and elderly people may not be able to easily 'stop, drop and roll' if their clothing ignites.

While everyone needs at least one working smoke detector on every level of their home, this is even more important to smokers because of the high risk of fire death. Placing a detector inside every bedroom increases the probability that if a fire occurs, residents will wake up in time to escape. A cigarette accidentally left on a sofa, places the smoker and everyone else in the building at risk. A smoke detector's warning may enable a smoker to live long enough to quit.

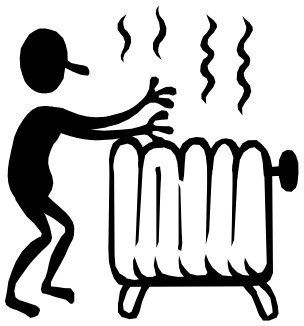
No smoking should ever be permitted in a home where oxygen is in use. The oxygen-enriched environment increases the speed at which the fire will burn once it

starts. “Most materials will ignite at considerably lower temperatures in oxygen-enriched environments than in air, and once ignited, combustion rates are greater in oxygen-enriched environments.”[63]

Oxygen can saturate clothing, rugs, upholstery, and facial hair increasing the fire danger even when the home oxygen system is “turned off”.

Illegal to Throw Cigarettes Out Car Window
The improper disposal of smoking materials has been a major problem to the fire service for years. Massachusetts General Law Chapter 148 Section 54 states, “Whoever drops or throws from any vehicle while the same is upon a public or private way running along or near forest land or open fields, or, except as permitted by law, drops, throws, deposits or otherwise places in or upon forest land, any lighted cigarette, cigar, match, live ashes or other flaming or glowing substance, or any substance or thing which in and of itself is likely to cause a fire, shall be punished by a fine of not more than one hundred dollars or by imprisonment for not more than thirty days.”

Heating Equipment Fires



3,006 Fires, 4 Civilian Deaths, 35 Fire Service Injuries
Massachusetts fire departments reported that some form of heating equipment was involved in 3,006, or 18%, of the 16,574 building fires in 2007. These heating equipment fires caused four civilian fire deaths, 26 civilian injuries, 35 fire service injuries, and an estimated dollar loss of $26.5 million. The average loss per fire was $8,818.

92% of All Heating Fires Were Confined Fires
In 2007, 92% of heating fires were confined to the container of origin. One thousand nine hundred and fifty-five (1,955), or 65% of all heating related building fires in Massachusetts, were coded as fuel burner/boiler malfunction, fire contained. Eight hundred and seventeen (817), or 27%, were determined to be chimney or flue fires, confined to the chimney or flue. In version 5, you are able to report two types of structure fires caused by heating equipment that are contained to its non-combustible container. When one of these incidents is reported, the official writing the report only needs to complete a Basic Module, so causal data fields that would otherwise be captured on the Fire Module are not required.

The number of contained heating fires rose slightly in 2007. Confined heating equipment fires increased by 21 incidents, or 1%, from the 2,751 reported in 2006.

[63] *Fire Protection Handbook*, 19th edition, 2003, National Fire Protection Association, pg 8-134, Quincy, MA.

Types of Heating Equipment
Only one type of equipment per fire incident may be reported to MFIRS. Consequently, the totals for specific types of equipment, should, in many cases, be considered underestimates. For example, sparks from a wood stove may ignite a fire in the chimney. The recorded equipment involved might be either the chimney or the wood stove, but not both. When a fire results from an extension cord overloaded by the demands of a portable heater, the extension cord might be recorded instead of the heater.

The following table shows the number of fires caused by each of the leading types of heating equipment (which caused fires), the percentage of heating equipment fires for each type of equipment, the number of civilian and fire service deaths and injuries, and the estimated dollar loss for each type of heating equipment.

HEATING EQUIPMENT FIRES

	# of	% of	Injuries		Deaths		Dollar
Equipment	**Fires**	**Heat Eq.**	**FF**	**Civ**	**FF**	**Civ**	**Loss**
Central heating units	1,979	66%	3	10	0	0	$722,585
Confined	*1,911*	*63%*	*3*	*7*	*0*	*0*	*260,181*
Furnace, central heating unit	*50*	*2%*	*0*	*2*	*0*	*0*	*324,904*
Boiler (power, process, heating)	*18*	*1%*	*0*	*1*	*0*	*0*	*137,500*
Chimney, flue	848	28%	6	2	0	0	1,445,399
Confined (no equip. reported)	*803*	*27%*	*3*	*1*	*0*	*0*	*149,699*
Fireplace, chimney, other	*14*	*0.5%*	*0*	*0*	*0*	*0*	*323,200*
Chimney, brick, stone, masonry	*15*	*0.5%*	*2*	*0*	*0*	*0*	*194,500*
Chimney connector, vent connect.	*3*	*0.1%*	*1*	*0*	*0*	*0*	*101,500*
Chimney, metal, incl. stovepipe	*13*	*0.4%*	*0*	*1*	*0*	*0*	*676,500*
Fixed, local heating	62	2%	7	3	0	1	2,133,843
Stove, heating	*56*	*2%*	*5*	*3*	*0*	*1*	*2,008,343*
Furnace, local heat. unit, built-in	*6*	*0.2%*	*2*	*0*	*0*	*0*	*125,500*
Water heater	18	1%	1	7	0	0	961,325
Fireplace	18	1%	4	0	0	0	877,500
Fireplace, masonry	*13*	*0.4%*	*4*	*0*	*0*	*0*	*681,500*
Fireplace insert/stove	*5*	*0.2%*	*0*	*0*	*0*	*0*	*196,000*
Space heaters	32	1%	7	4	0	3	1,730,267
Portable space heaters	*19*	*1%*	*7*	*2*	*0*	*3*	*1,501,477*
Heating, vent. & air cond., other	46	2%	6	0	0	0	18,334,450
Total	**3,006**	**100%**	**35**	**26**	**0**	**4**	**$26,507,389**

Central Heating Units

1,979 Fires, 10 Civilian Injuries & 3 Fire Service Injuries
Central heating units[64] were involved in 1,979 structure fires in 2007. These fires caused 10 civilian injuries, three fire service injuries, and an estimated dollar loss of $722,584. The average loss per fire was $365. One thousand nine hundred and fifty-five (1,955) of these fires involving central heating units were confined fires.

18% Caused by Mechanical Failures or Malfunctions
Of the 177 central heating unit fires where Factors Contributing to Ignition was completed, 18% were caused by mechanical failures or malfunctions; 7% were caused by backfires; a failure to clean the equipment and automatic control failures each caused 8% of these fires; 3% were caused because of operational deficiencies; and 2% were caused because combustibles were placed too close to the heater.

Fifty-eight (58), or 52%, of the 111 central heating unit fires where the power source was known were caused by liquid-fueled equipment. These fires caused five civilian service injuries and an estimated dollar loss of $186,500. The average loss per fire was $4,908.

Thirty-eight (38), or 34%, were caused by electrically powered equipment[65]. Thirteen (13), or 12%, of the central heating unit fires were caused by gas-fueled equipment; and two, or 2%, were caused by wood-fueled equipment.

Furnaces Should Be Cleaned and Checked Annually
- Homeowners should have furnaces cleaned and checked annually to ensure that they are working well.
- Combustible materials such as trash or supplies should never be stored near heating equipment.
- Keep a 3-foot clear space around the furnace.
- Only licensed trades people may install oil, gas, or electric heating units.
- Regulations about oil burners may be found in 527 CMR 4.

Chimney Fires

848 Fires Caused 6 Fire Service Injuries & $1.4 Million in Damages
Eight hundred and forty-eight (848) building fires involved chimneys[66], gas vent flues, chimney connectors or vent connectors. These 848 fires caused two civilian injuries, six

[64] These include all structure fires with Equipment Involved = 132: Furnace & 133: Boiler, central heating unit. And all Incident Type = 116 Fuel burner/boiler malfunction, fire confined that did not complete a Fire Module.
[65] Version 5 has a data field called Equipment Power Source that describes the power source of the equipment involved in ignition.

fire service injuries and an estimated dollar loss of $1.4 million. The average dollar loss per fire was $1,704.

Eight hundred and seventeen (817) of these chimney or flue fires were confined to the chimney or flue. Seven hundred and seventy-two (772) of these did not report any equipment involved or they were reported using only a Basic Module.

Twenty percent (20%) of the 134 fires where heat source was reported, were caused by a failure to clean the creosote buildup; 4% were caused by unclassified operational deficiency; and another 3% were caused by unclassified misuse of materials or products.

Have Chimneys Cleaned Annually to Remove Creosote
Creosote is a black, tar-like by-product of fire. It can accumulate in your chimney and cause a fire. Have your chimney cleaned at the start of each heating season and check it monthly for soot build-up. It should also be checked for loose mortar. If you use a wood or coal stove, keep the temperature in the recommended range. Use chimney guards to prevent animals from nesting in your chimney. If you should have a chimney fire, have the chimney inspected by a professional before using it again.

Fixed Heater Fires

62 Fires, 1 Civilian Death, 7 Fire Service Injuries & $2.1 Million
Sixty-two (62) fixed heater structure fires caused one civilian death, three civilian injuries, seven fire service injuries and an estimated dollar loss of $2.1 million. The average dollar loss per fire was $34,417.

Fixed heaters include stationary local units such as wood stoves and in-room gas heaters. A central heating unit heats the entire building or apartment, whereas a fixed local heating unit is set in a specific room to heat just that room or immediate area.

18% Caused by Combustibles Being Too Close to the Heat Source
Eighteen percent (18%) of fixed heater fires were caused by combustibles being too close to the heat source. Eleven percent (11%) were caused from the heater being left unattended. Unclassified misuse of materials or products, spilled flammable liquids, unclassified operational deficiencies, a failure to clean the equipment and the heater being accidentally turned on and then not turned off each caused 3% of fixed heater fires in 2007.

Electrical powered fixed heaters caused 26, or 44%, of these fires and were responsible for one civilian injury, one fire service injury and a dollar loss of $238,600. Fifteen (15), or 25%, were caused by gas-fueled fixed heaters and they were responsible for two fire

[66] These include all incidents with an Incident Type = 114: Chimney or flue fire, confined to the chimney or flue, and all other structure fires with Equipment Involved = 120 or between 125 and 127.

service injuries and a dollar loss of $768,500. The average loss per fire was $51,233. Seventeen (17), or 29% of fixed heater fire incidents in 2007, involved solid fueled fixed heaters, 14 of which were wood fueled. These fires caused one civilian death, two civilian injuries, four fire service injuries and an estimated dollar loss of $1.1 million and the average dollar loss was $64,703. Six (6), or 8%, of these heater fires were caused by liquid-fueled heaters, and they were responsible for $2,001 in losses. There were three fires where the power source of the fixed heater was undetermined. These were excluded from the calculations.

Install Wood Stoves According to Building Code Standards
A homeowner must obtain a building permit prior to installing a wood or coal stove and the installation must be inspected upon completion. In general, the stove should be at least three feet away from walls, ceilings and furnishings. If the flue does not draw properly, deadly levels of carbon monoxide may accumulate in the home.

- Keep the temperature within the manufacturer's suggested range. Wood and coal stoves should be operated at moderate heat. If the fire is too low, creosote, a black tarry fire by-product, may accumulate in the chimney and eventually cause a fire. If the fire is too hot, nearby combustibles or creosote in the chimney could ignite.

- Only burn fuels intended for use in these stoves. Other items may cause overheating and the release of toxic gases. Never use gasoline or flammable liquids to stoke the fire — doing so could cause a flash fire or explosion.

- Install and regularly test smoke and carbon monoxide detectors.

- Have your chimney cleaned and inspected for creosote build-up before each heating season, and check it at least once a month during the season.

- Place ashes in a covered metal container until they are completely cool. Store outdoors, away from the house, porch or other outside buildings. Hot ashes may stay "live" for 24 hours.

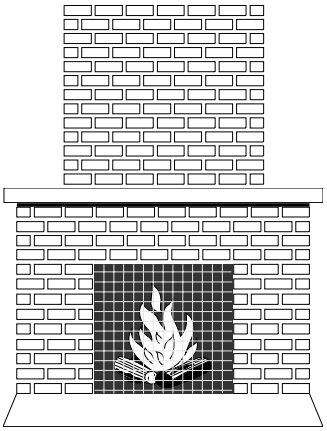
Fires Caused by Hot Water Heaters

18 Fires, 7 Civilian Injuries, 1 Fire Service Injury & $961,325 in Damages
Eighteen (18) structure fires were caused by hot water heaters[67] in 2007. These 18 fires caused seven civilian injuries, one fire service injury and an estimated dollar loss of $961,325. The average dollar loss per fire was $53,407. Combustibles placed too close to the water heater caused 28% of these fires. Thirty-three percent (33%) of these fires were started by radiated or conducted heat from operating equipment and 22% were ignited from a spark, ember or flame from operating equipment and.

[67] These include all structure fires with Equipment Involved = 151: Water Heater.

Fifty-three percent (53%) of the 17 fires involving hot water heaters were identified as gas-fueled water heaters. Forty-seven percent (47%) were identified as electric powered water heaters; and there was one fire where the power source was undetermined.

Fires Caused by Fireplaces



18 Fires, 4 Fire Service Injuries & $877,500 in Damages
Eighteen (18) fireplaces[68] were involved in Massachusetts structure fires in 2007. These 18 fires caused four fire service injuries and an estimated dollar loss of $877,500. The average dollar loss per fire was $48,750.

Eleven percent (11%) each were caused when combustibles were placed too close to the fireplace, unclassified mechanical failures, construction deficiencies, installation deficiencies, and operational deficiencies.

Fifteen (15), or 94%, of fireplaces involved in fires were solid-fueled. One (1) incident, or 6% was electric.

Space Heater Fires

32 Fires, 3 Civilian Deaths, 4 Civilian Injuries & 7 Fire Service Injuries
Space heaters of all kinds accounted for 32 fires and caused three civilian deaths, four civilian injuries, seven fire service injuries, and an estimated dollar loss of $1.7 million. The average dollar loss per fire was $54,071.

Portable Space Heater Fires

19 Fires, 3 Civilian Deaths 2 Civilian Injuries & 7 Fire Service Injuries
Nineteen (19) portable space heater[69] fires caused three civilian deaths, two civilian injuries, seven fire service injuries and an estimated dollar loss of $1.5 million. The average dollar loss per fire was $79,025. The heater being too close to combustibles caused 53% of these fires. Unattended equipment caused 16%, unclassified electrical failures caused 11%, and the heaters not being operated properly caused 5% of the space heater fires in 2007.

[68] These include all structure fires with Equipment Involved = Between 121 and 123.
[69] These include all structure fires with Equipment Involved = Between 141 and 143; and Equipment Portability = 1: Portable

Sixteen (16), or 89% of the portable heaters involved in fires were electric; one, or 6%, was gas-fueled; and another, or 6% was liquid-fueled. In one incident, it was undetermined how the space heater was powered.

History has taught us that the larger heating fire problem is from portable space heater fires. Though not many in number, they usually result in a high number of deaths. During the past five years (2003 – 2007), there have been 61 reported residential fires started by portable space heaters with six civilian deaths and 12 civilian injuries resulting from these fires. That is one fire death and two civilian injuries for every 10 space heater fires.

If you must use a space heater for heat, use it as safely as possible.

- When buying a heater, look for one that has been tested and labeled by a nationally recognized testing company.
- Keep the heater three feet away from drapes, furniture or other things that can burn. Place it on a level surface away from areas where a person or a pet might bump it and knock it over.
- If you must use an extension cord, make sure it is a heavy-duty cord marked with a power rating as least as high as that on the label of the heater itself.
- Never leave a space heater unattended or running while you sleep.
- Keep electric heaters away from water. Never use them near a sink or in the bathroom.
- Do not use space heaters to thaw pipes. They were not designed for this task. Space heaters must be kept at least 3 feet away from any combustibles including walls and wall coverings.

According to MGL Chapter 148, Section 5A, 25A and 25B, the sale and use of liquid-fired unvented space heaters using kerosene, range oil, number 1 fuel oil, or any oil as fuel are illegal in Massachusetts. The use of unvented space heaters using natural gas or propane gas as fuel is acceptable only if they meet the requirements of 780 CMR 30.00.

Fires Caused by HVAC, Other

46 Fires, 6 Fire Service Injuries and $18.3 Million in Damages

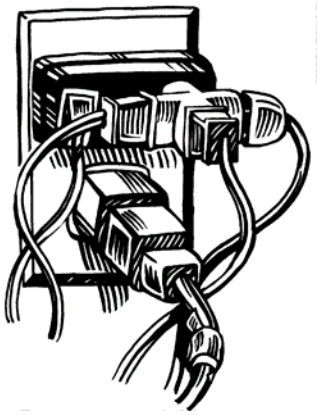
Forty-six (46) structure fires were caused by unclassified heating, ventilation and air conditioning equipment (HVAC, other)[70] in 2007. These 46 fires caused six fire service injuries and an estimated dollar loss of $18.3 million[71]. The average dollar loss per fire was $398,575. Unclassified mechanical failures or malfunctions caused 30% of these fires; and combustibles placed too close to the equipment caused 17%.

[70] These include all structure fires with Equipment Involved = 100: Heating, ventilating & air conditioning, other.

[71] One fire at the East Somerville Community College caused $16 million in damages. Chelmsford also had a $1 million dollar fire involving this type of heating equipment.

Sixty-seven percent (67%) of the 43 fires involving unclassified heating, ventilating or air conditioning equipment were identified as electric powered. Twenty-six percent (26%) were identified as gas-fueled equipment, and 7% were identified as solid-fueled equipment.

Electrical Fires



620 Electrical Fires Caused 6 Civilian Deaths
Local fire departments reported that there were 620 structure fires caused by electrical problems in Massachusetts in 2007. These fires caused four civilian deaths, 40 civilian injuries, 68 fire service injuries and an estimated dollar loss of $25.1 million. The average loss per fire was $40,451.

Electrical Fires Were the 2nd Leading Cause of Fire Deaths
Electrical fires were the second leading cause of structure fire deaths in 2007. Five (5) fatal electrical fires, or 15% of fatal structure fires, caused six, or 15%, of structure fire deaths in 2007. In 2005, electrical fires were the leading cause of fire deaths, causing nine, or 17% of the structure fire deaths.

When we used MFIRS version 4, this section of the annual report used to count electrical equipment fires. The criteria to qualify for an electrical equipment fire was to have the Form of Heat of Ignition – heat from electrical equipment arcing, overloaded. In version 5 this section has been expanded to include all fires caused by electrical problems or malfunctions. The new criteria is to have Factors Contributing to Ignition – equipment overloaded or – electrical failure malfunction or to have Equipment Involved in Ignition in the 200 series – electrical distribution, lighting and power transfer equipment.

Unspecified Electrical Failure Responsible for Over 1/3 of Electrical Fires[72]
Over one-third of electrical fires caused by unspecified electrical failure. Two hundred and ten (210), or 34% of electrical fires, were caused by an unclassified electrical failure or malfunction. One hundred and forty-one (141), or 23%, were caused by an unspecified short circuit arc. Twelve percent (12%), or 75 of these fires, had a short circuit arc from defective or worn insulation. Thirty-five (35), or 6%, of electrical fires were caused by an arc from a faulty contact or broken conductor. Thirty-two (32), or 5%, of electrical fires were caused by a short circuit arc from mechanical damage. Three percent (3%), or 19 of

[72] *Factors Contributing to Ignition* is one of the fields in version 5 that allows for multiple codes. Two factors contributing to ignition may be coded. For example, in the case of a malfunctioning electrical heater, we can capture not only the electrical malfunction, but also a contributing factor such as: was the heater too close to combustibles; did the automatic control fail; was it knocked over; was it worn out; or was the equipment overloaded. This field also is not a mandatory field, although fire departments are strongly encouraged to complete it, should it apply to the incident. Because of these factors, the percentages may not add up to 100%.

the fires, were caused by overloaded equipment. An arc or spark from operating equipment caused 17, or 3% of these fires. The heat source being too close to combustibles also caused 15, or 2%, of these fires. Water caused a short circuit arc in 12, or 2%, of electrical fires in 2007.

Electrical Equipment Fires

Three hundred and twenty (320), or 52%, of the 620 electrical fires reported the type of equipment involved in ignition. These 320 fires caused three civilian deaths, 23 civilian injuries, 44 fire service injuries and an estimated dollar loss of $13.8 million. The average dollar loss per fire was $42,989.

116 Electrical Service, Wiring, Meter Boxes & Circuit Breaker Fires
The most common reported Equipment Involved in Ignition in electrical fires was electrical service, wiring, meter boxes and circuit breakers accounting for 116, or 36%, of the fires. These fires caused one civilian injury, 24 fire service injuries and an estimated dollar loss of $4.9 million. The average dollar loss per electrical wiring fire was $42,444.

Lamp, Lighting Fixtures Involved in 49 Fires
Lamps and other lighting fixtures were involved in 49, or 15%, of electrical equipment fires where equipment involved in ignition was reported. These fires caused one civilian death, seven civilian injuries, three fire service injuries and an estimated dollar loss of $1.9 million. The average loss per fire was $38,466.

Ventilation & Air Conditioners Caused 21 Fires
Twenty-one (21), or 7%, of the structure fires involving known electrical equipment were caused by air conditioning or ventilation units. These fires caused two civilian injuries, seven fire service injuries and an estimated dollar loss of $610,400. The average dollar loss per fire was $29,067.

24 Fires Involving Kitchen & Cooking Equipment
Twenty-four (24) electrical equipment fires involving kitchen or cooking equipment; they caused five civilian injuries, three fire service injuries and an estimated dollar loss of $1.6 million. These fires accounted for 8% of the structure fires involving electrical equipment when equipment involved in ignition was reported. The average dollar loss per fire was $68,698.

Cords or Plugs Caused 26 Fires
Twenty-six (26), or 8%, of the structure fires where electrical equipment involved was reported were caused by cords or plugs. These fires caused two civilian deaths, one civilian injury, one fire service injury and an estimated dollar loss of $849,850. The average dollar loss per fire was $32,687.

Household Appliances (Non-Cooking) Caused 16 Fires
Non-cooking household appliances such as clothes dryers, washing machines and trash compactors, caused 16, or 5%, of the 306 electrical structure fires where equipment involved in ignition was reported. These 16 fires caused an estimated $240,775 in damages. The average dollar loss was $15,048.

10 Fires Involving Unspecified Electrical Distribution Equipment
Ten (10) electrical equipment fires involving unspecified electrical distribution equipment caused two fire service injuries and an estimated dollar loss of $1 million. These fires accounted for 3% of the building fires involving reported electrical equipment. The average dollar loss per fire was $104,590.

Heating Equipment Caused 24 Fires
Twenty-four (24), or 8%, of the structure fires involving known electrical equipment were caused by various heating equipment. These electrical fires involving heating equipment caused two civilian injuries, two fire service injuries and an estimated dollar loss of $ 523,010. The average dollar loss per fire was $21,792.

Transformer, Generator, Battery or Chargers Caused 16 Fires
Transformers, generators, batteries and chargers were involved in 16, or 5%, of the electrical fires where equipment involved in ignition was reported. These fires caused one fire service injury and an estimated dollar loss of $1.4 million. The average loss per fire was $88,457.

8 Fires Involving Electronic & Other Electrical Equipment
Eight (8) electrical equipment fires involving electronic and other electrical equipment caused five civilian injuries, one fire service casualty and an estimated dollar loss of $449,700. These fires accounted for 3% of the structure fires involving reported electrical equipment. The average dollar loss per fire was $56,213.

4 Fires Involving Decorative Lighting & Signs
Four (4) electrical fires involving decorative or landscaping lights or electric signs caused an estimated dollar loss of $5,030. These fires accounted for 1% of the structure fires involving electrical equipment. The average dollar loss per fire was $1,258.

5 Fires Involving Shop Tools & Industrial Equipment
Five (5) electrical fires involving shop tools or industrial equipment caused an estimated dollar loss of $151,500. These fires accounted for 2% of the structure fires involving electrical equipment. The average dollar loss per fire was $30,300.

300 Unspecified Electrical Equipment Fires Caused $10 Million in Damages
There were 300 electrical fires where the piece of equipment involved in ignition was unknown or not reported. These 300 fires caused three civilian deaths, 17 civilian injuries, 24 fire service injuries and an estimated dollar loss of $11.3 million. The average dollar loss per fire was $31,044.

Large Loss Electrical Fire
There was one large loss ($1 million+) electrical fire in 2007. There were also 83 fires with estimated damages between $100,000 and $999,999.

- On October 20, 2007 at 4:41 p.m., the Bourne Fire Department was called to an electrical fire in a restaurant. The fire began with an unspecified short circuit in an outlet in the attic. There were six firefighters injured battling this blaze. Detectors were present and alerted the occupants of the building. The building was not sprinklered. Damages from this fire were estimated to be $1,500,000.

Electrical Fire with Most Civilian Injuries
- On November 2, 2007 at 4:31 a.m. the Lynn Fire Department was called to an electrical fire in a three-unit apartment building. The fire was caused when a lamp came into contact with some clothes and ignited them. There were six civilian injuries and two fire service injuries at this fire. Detectors were present and operated. Sprinklers were not present. There was no estimate of damages from this fire.

Electrical Fire with Most Fire Service Injuries
- On February 24, 2007 at 6:44 a.m., the Chelsea Fire Department was called to a fire at a single-family home. The fire began with arcing in a second floor bedroom. Seven (7) firefighters were injured battling this blaze. It was undetermined if smoke detectors were present. The building did not have any sprinklers. Damages from this blaze were estimated to be $120,000.

3/4 of Electrical Fires Occurred in Residential Occupancies
Three-quarters of electrical fires occurred in residential occupancies. Of the 579 electrical fires, 468, or 75% occurred in residential occupancies. Fifty-five (55), or 9%, occurred in mercantile or business properties, such as offices, banks, retail stores or markets. Public assembly buildings like restaurants, libraries and courthouses accounted for 25, or 4%, of these fires. Institutional buildings such as hospitals and asylums had 24, or 4%, of the electrical fires occur on their premises. Educational properties accounted for 15, or 2%, of Massachusetts' electrical fires in 2007. Storage properties accounted for 12, or 2%, of these fires. Eight (8), or 1%, of electrical fires occurred in special or outside properties. Manufacturing or processing facilities had seven, or 1%, of these incidents. Six (6), or 1%, of Massachusetts' electrical fires occurred in basic industry properties such as laboratories, communications centers, electrical distribution sites and utility and distribution centers.

Over 1/4 of Electrical Fires Began in the Kitchen or Bedroom
Twenty-six percent (26%) of electrical fires began in the kitchen or bedroom. Eighty (80), or 14%, originated in the bedroom. Sixty-nine (69), or 12%, of the 620 electrical fires occurred in the kitchen. A wall assembly or concealed wall space was the area of origin for 47, or 8%, of these fires. The substructure area or crawl spaces, accounted for 43, or 7%, of the electrical fires. The ceiling and floor assembly or crawl space between stories accounted for 7%, or 41, of these electrical fires. Six percent (6%), or 35, occurred

each in the living room. The bathroom accounted for 5%, or 30, of the electrical in Massachusetts in 2007.

Electrical Wiring Was the Item First Ignited in Over 1/3 of Electrical Fires
Electrical wiring was the item first ignited in over one-third of electrical fires. In 195, or 34%, of electrical fires, electrical wiring or cable insulation was the item first ignited. This includes fixed wiring and appliance cords. In 87, or 15% of these fires, a structural member or framing, was the first item ignited. Thermal or acoustical insulation within a wall was the item first ignited in 4% of electrical fires in 2007. Appliance housings or casings were the item first ignited in 4% of electrical structure fires. Structural components or finishes were the item first ignited in 4% of electrical fires in 2007. Exterior sidewall coverings were also the item first ignited in 4% of these fires.

Watch For Warning Signs
People should watch for warning signs of electrical problems. These include:

- Fuses blowing or circuit breakers tripping frequently.
- Unusually warm or faulty outlets or switches.
- A vague smell of something burning.
- A sizzling sound in the wall.

Any of these signs may indicate a potential problem. Contact a licensed electrician if you notice any of these signs. Or contact the local fire department. Many departments now have new technologies such as thermal imaging cameras that can see inside walls to detect potential problems before they expand and extend to other parts of the building.

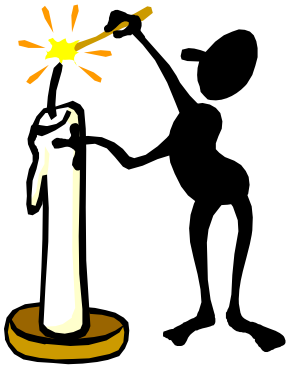
Fuses and circuit breakers are safety devices. They blow or trip when the amount of current cannot safely travel through the wires. *Trying to bypass the fuse or circuit breaker protection is an invitation to danger.*

Electrical Systems Pose Unseen Dangers
Just as all systems need maintenance and inspection, so does electrical wiring. As switches, receptacles and connections age, heat is generated and the risk of fires inside walls and at poor connections greatly increases. Because wiring is often hidden behind walls, electrical faults may be hard to detect except by properly trained electricians.

Have Electrical Systems Examined by a Licensed Electrician Every 10 Years
Have electrical systems examined by a licensed electrician every 10 years. A good electrician will look for electrical faults, check for warm switch plates and receptacles, and analyze the use of electricity to see if additional capacity is needed. It is important to help our homes keep up with the electrical demands of our changing lifestyles, changes in society and new technologies.

Candle Fires

146 Candle Fires Caused 2 Civilian Deaths
In 2007, candles caused 146 fires of all types. These fires caused two civilian deaths, 14 civilian injuries, seven firefighter injuries and an estimated dollar loss of $5.1 million in damages. There was a 20% decrease from the 182 fires of all types started by candles in Massachusetts in 2006.



92% of Candle Fires are Structure Fires
Of the 146 candles fires in 2007, 135, or 92%, were classified as structure fires. None were reported as motor vehicle fires. Three, or 2%; were brush fires; two, or 1%, were special outside fires; one, or 1% was an outside rubbish fire; and five, or 3%, were unclassified fires.

Candle Fires Happen Most During the Holidays
Between 2003 and 2007, the day of the year the most candle fires occurred was December 24, Christmas Eve with 11 reported candle fires. December 20th also had 11 reported candle fires during the same time period. Halloween had the third most candle fires with 10. November 28 had the fourth most candle fires during any one day of the year during the past five years with nine.

2 People Died in Candle Fires in 2007
In 2007, two people died in one fire started by a candle.

Boston's Fatal Candle Fire Also Largest Loss Candle Fire
On February 24, 2007, at 5:16 a.m., the Boston Fire Department was called to a fatal candle fire in a 9-unit apartment building. The victims, a 21-year old woman and a 22-year old man, were both college students living in off-campus housing. A third student, a 22-year old man, suffered life–threatening injuries at this fire. They had lit the candles for light due to a power outage. All three were sleeping at the time of the fire and the two victims died from the burns and smoke inhalation. Detectors were present but failed to operate due to the power outage. Damages were estimated to be $900,000.

94% of Candle Fires Occurred in Homes
Of the 135 candle fires that occurred in buildings, 94% were residential fires. Candles caused 127 residential building fires, both of the civilian deaths, 13 civilian injuries, four firefighter injuries and an estimated dollar loss of $5 million. Three (3) candle fires, or 2%, occurred at mercantile or business properties; one candle fire, or 1%, occurred each in a public assembly property, an educational facility, an institutional facility, a storage facility, and a special property.

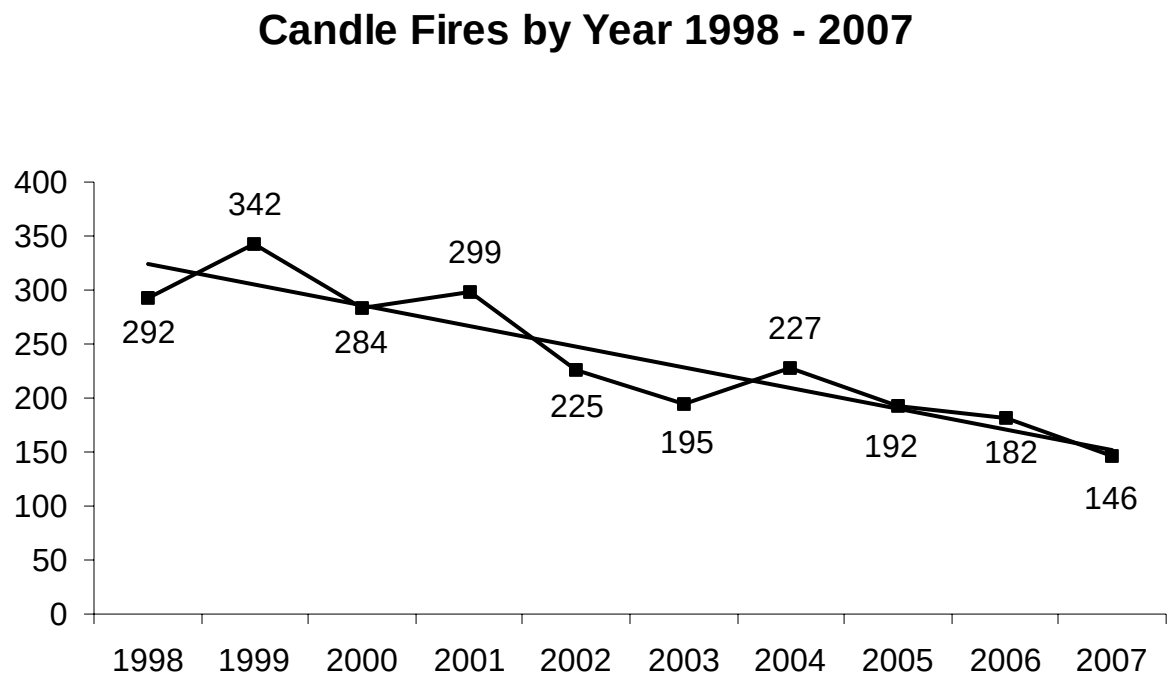
45% of Candle Fires in Homes Occurred in the Bedroom
Of the 127 candle fires in residential structures, 45% occurred in the bedroom. Twenty percent (20%) occurred in the living room; 9% started in the bathroom; another 9%

occurred in the kitchen; and 6% occurred in some other type of function room such as three-season rooms. It is all too easy to fall asleep and leave a candle burning unattended in the bedroom.

Smoke Detectors Operated in 59% of Candle Fires in Homes
Of the 127 candle fires in homes, smoke alarms operated in 59%. Smoke detectors were present but did not operate in 9% of these incidents. No detectors were present in 7% of candle fires in people's homes. Eight percent (8%) of the candle fires were too small to activate the smoke detector. In 21 incidents, or 16%, the smoke detector status was undetermined.

Candle Safety Tips
- Burn candles in the center of a 1-foot **Circle of Safety,** free of anything that can burn.
- Stay in the same room with burning candles; do not leave unattended.
- Burn candles on a non-combustible surface such as a ceramic saucer, or plate.
- Be sure to snuff out candles before falling asleep, going out, or leaving the room.
- Teach everyone in the family the rules of safe candle use.
- Keep candles out of reach of small children and pets.

Candle fires had become a serious problem in Massachusetts during the decade of the 1990's, nearly tripling from 93 incidents in 1990 to an all time high of 342 in 1999. The following chart shows candle fires over the past decade increasing from 272 candle fires in 1997 to the peak of 342 candle fires in 1999 and then decreasing to 146 in 2007. In 1999, a new effort to analyze these incidents began. In conjunction with the National Fire Protection Association (NFPA), the Office of the State Fire Marshal conducted a follow-up survey that went out to any fire department having a candle fire for one year. The goal



was to gain a greater understanding of these incidents, why they are happening and what we can do to prevent them.

Major findings from the report were:

- 75% of the fires occurred when the candle was left unattended.
- 40% of the fires resulted from combustible materials being too close to the candle.
- Teenagers face the greatest risk of starting candle fires. Although teens account for only 9% of the state population, 21% of the candle fires were attributed to them. Two-thirds of candle users, however, were between 20 and 64 years old.
- 98% of the candles used in Massachusetts' candle fires were not needed as sources of light but were used for other purposes such as decoration, pleasure or mood.

There has been a downward trend in candle fires since the year 2000. Stronger public education and tougher industry standards are the main reasons for this downturn. From 1999 to 2007 there was 57% decrease in candle fires. In 2000, State Fire Marshal Coan began reaching out to candle manufacturers and retailers in Massachusetts to ask for their help in educating consumers on candle fire safety and to highlight and separate fire safety information from other fire safe use tips. He also asked them to adopt the candle **Circle of Safety** logo, to use it in their printed materials and on their webpages.

The downward trend is contrary to the national trend of the increasing problem of candle fires, especially in residences. According to the NFPA's most recent statistics[73], the share of fires started by candles in homes has jumped to 4%. In Massachusetts candle fires only represent 1% of total residential building fires.

More information on candle fire safety can be found on our webpage at http://www.mass.gov/dfs.htm.

[73] Ahrens, Marty, "Home Candle Fires," NFPA, Quincy, MA (September, 2007); pg. i.

Clothes Dryer Fires

Dryer Fires Cause $637,432 in Damages

One hundred and twenty-one (121) clothes dryer fires caused five civilian injuries, two firefighter injuries, and an estimated dollar loss of $637,432. The average dollar loss per fire was $5,268. Of these 121 fires, 97, or 80%, occurred in residential occupancies.

Twenty-nine percent (29%) of the dryer fires were caused by a failure to clean the machines; 9% were caused by operational deficiencies; 8% were caused by mechanical failures or malfunctions; 7% were misused; and another 7% were too close to combustibles.

53% of Dryers Were Electrical

Fifty-three percent (53%), of the 121 dryers involved in fires were identified as having electricity as their power source. Forty-three percent (43%) involved gas-fueled clothes dryers. This may be a reflection of the market share of electrical and gas-powered dryers rather than any inherent danger of one power source over another.

Forty-three percent (43%) of dryer fires identified the heat source as heat coming from the dryer itself but could not be any more specific. Thirty-one percent (31%) of clothes dryer fires identified the heat source as radiated or conducted heat from equipment inside the dryer itself.

Almost 2/3 of Clothes Dryer Fires Occurred In 1- & 2-Family Homes

Sixty-three percent (63%) of the dryer fires occurred in one- and two-family homes. Twelve percent (12%) occurred in apartments; 12% occurred in mercantile or business properties such as laundry or dry cleaning businesses; 7% occurred in institutional properties such as nursing homes hospitals and jails; 2% occurred in hotel and motels; 1% occurred at educational facilities; 2% occurred in rooming houses; 1% occurred in dormitories; another 1% occurred in unclassified residential occupancies; and 1% happened in storage facilities.

Clean the Lint Filter After Every Load

The public should be reminded to clean the dryer filter screen after each load of laundry, to clean the outside vents twice a year and to occasionally vacuum the motor area of the dryer. If materials such as cooking oil, solvents and other combustible or flammable liquids were not removed completely during the laundry cycle, heat from the dryer may cause them to ignite. This is the reason that mop heads should not be put into the dryer. An adult should be at home whenever the dryer is in use and the home should have working smoke alarms.

- Remember to keep dryer vents clear during heavy snowstorms to prevent the risk of carbon monoxide poisoning.

North Adams Has Largest Loss Clothes Dryer Fires

- On October 8, 2007 at 12:19 a.m., the North Adams Fire Department was called to a dryer fire in a two-family home. The fire began in an electrically powered clothes dryer in the first floor laundry room and extended to the kitchen and the second floor. No one was injured at this fire. Damages from this fire were estimated to be $100,000. Detectors were not present, and there were no sprinklers in the building.

Fireworks Incidents

114 Incidents Involving Fireworks Caused $162,135 In Damages

There were 114 fire and explosion incidents reported that involved fireworks in 2007. This is a 52% increase from the 75 fire and explosion incidents reported in 2006. Incidents involving fireworks caused one civilian injury, one fire service injury and an estimated $162,135 in property damages. The average dollar loss per fireworks incident was $2,420.

Almost 1/3 of Fireworks Fires Occurred the Week of July 4th

Twenty (20), or 30%, of the 67 fireworks-caused fires in 2007 took place during the week of the 4th of July. Eleven (11) of the 20 incidents, occurred between July 3 and July 5. Seventy-eight percent (78%) of the fireworks incidents were brush fires, while 13%, were structure fires.

In version 5, a fireworks explosion without fire is coded as an Incident Type 243 – Fireworks explosion (no fires). In 2007, 47 such incidents were reported.

Largest Loss Fireworks Fire – Fall River Apartment Fire

- On August 11, 2007, at 9:18 p.m., the Fall River Fire Department was called to a fire at a three-unit apartment building. The fire began when fireworks were ignited inside the third floor apartment's living room. One firefighter was injured at this fire and damages were estimated to be $125,000. It was undetermined if smoke detectors were present. There were no sprinklers in the building.

Refer to M–BIRS Annual Report for More Information about Fireworks Injuries

For more information about the causes of burn injuries, please refer to the *Massachusetts Burn Injury Reporting System — 2007 Annual Report.* According to Massachusetts General Law (MGL) Chapter 112, Section 12A, the treatment of all burn injuries extending over 5% or more of a person's body surface area must be reported immediately to the State Fire Marshal. All burn reports received by the Office of the State Fire Marshal are reviewed for possible suspicious circumstances. Gasoline burns, burns on the hands and arms or other unusual scenarios are referred for further investigation.

There were four fireworks-related burn injuries reported to M-BIRS in 2007. All four victims were between the ages of 13 and 17 years old. Since we started collecting burn injury reports in M-BIRS in 1984, the average number of fireworks-related burns per year is 11 burns. The highest number of reported fireworks-related burns occurred in 1989, with 45 reported burn injuries.

Grill Fires

46 Incidents Involving Grills in 2007 Caused 1 Civilian Death
In 2007, there were 46 fires and explosion incidents reported to the Massachusetts Fire Incident Reporting System (MFIRS) involving open fired grills. These incidents caused one civilian death, three civilian injuries, three fire service injuries, and an estimated dollar loss of $980,702. This is a 2% decrease from the 47 grill fires in 2006.

Predictably almost three-quarters, or 72%, of these incidents occurred in the months of May to September when people are most likely to use their outdoor grills.

Gas Grill Fires
Of the 46 grill incidents, 39, or 85%, of the grills were gas grills. Nine percent (9%) used solid fuels such as charcoal briquettes. Four percent (4%) of the grills involved in these incidents were electrically powered. It was undetermined in one, or less than 1% of these incidents what powered the grill. LP-gas grill fire incidents caused three civilian injuries and an estimated $91,952 in damage. Seventy-four percent (74%) of the LP-gas grill fires in Massachusetts occurred between May and September.

It is illegal to have LP-gas on balconies or porches above the first floor. Section 5a of 527 Code of Massachusetts Regulation 6:07 states "…Storage or use of LP-Gas containers above the first floor of a building used for habitation is prohibited…" The reason for this is that LP-gas is heavier than air and will sink. A spark from below could ignite gas that has leaked.

Brookline Fatal Fire is also Largest Loss Grill Fire

- On March 16, 2007, at 5:46 a.m., the Brookline Fire Department was called to a fatal cooking fire at a 3-unit apartment building. The victim, a 19-year old college student was visiting friends in their off-campus apartment. Someone had used a charcoal grill on the back porch the night before. Embers from the grill ignited the porch. The victim's unfamiliarity with the apartment led him to a bedroom closet instead of an exit and he succumbed to the smoke and heat generated by the fire. One firefighter was injured at this fire. Detectors were present and alerted the occupants of the

building. Sprinklers were not present. Damages from the blaze were estimated to be $528,000.

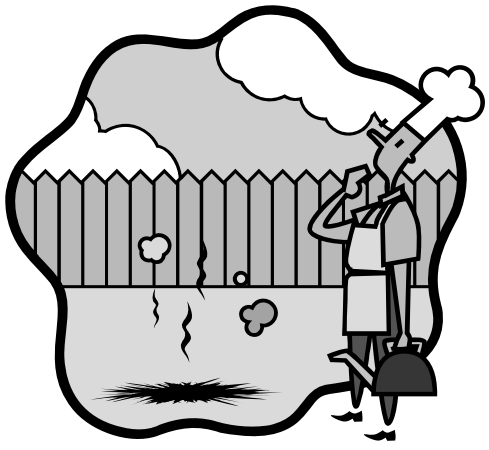
Refer to MBIRS Annual Report for More Information about Grill Injuries
For more information about the causes of burn injuries, please refer to the *Massachusetts Burn Injury Reporting System — 2007 Annual Report.* According to Massachusetts General Law (MGL) Chapter 112, Section 12A, the treatment of all burn injuries extending over 5% or more of a person's body surface area must be reported immediately to the State Fire Marshal. Twelve (12) civilians were reported to M-BIRS in 2007 with burn injuries from a grill. Two (2) of these burns occurred in April, three each in June July and August, and one happened in September.

Grill Safety
Follow these safety tips when using a grill:

- Use all barbecue grills away from the house in the backyard.
- Supervise children whenever any grill is in use.
- Never use gasoline on any grill!

Gas Grill Safety
- Keep all LP-gas outside, 10 feet away from building openings such as doors, windows, dryer vents and 20 feet from air intake vents. Gas grill containers must be kept at least five feet away from possible ignition sources such as air conditioners, compressors, cars, and pilot lights.
- LP-gas grills are not permitted inside or on balconies above the first floor of any building where people live. LP-gas is heavier than air and sinks. A leaky grill could pose a hazard to people below.
- Make sure all connections are tight and secure.

Charcoal Grill Safety
- Use only charcoal lighter fluid to start charcoal grills.
- Once the coals have been lighted, never add more lighter fluid to the fire — flames may travel up the stream of lighter fluid resulting in serious burns.
- Only use charcoal grills outside.



Carbon Monoxide Incidents

In 2007, 271 fire departments voluntarily reported 12,220 carbon monoxide (CO) incidents; hazards[74], carbon monoxide detector activation due to malfunction[75] and carbon monoxide detector activation – no CO[76]. A CO hazard is an identifiable carbon monoxide emergency whether or not a CO detector activated, the presence of CO was confirmed, and some corrective action was indicated. Fire departments responded to some 3,867 confirmed CO hazard incidents.

27% Increase from 2006

There was a 27% increase in reported carbon monoxide incidents between 2006 and 2007. In 2007, the number or reported carbon monoxide incidents increased by 2,566 calls, or 27%, from the 9,654 calls reported in 2006. Many reasons can explain this increase including but not limited to: an increase in fire departments voluntarily reporting these types of calls to MFIRS; a better educated public that may have purchased CO detectors for the first time after the tragedies of the Winter of 2004 – 2005; and the installation of CO detectors because of Nicole's Law, which made them mandatory in most residential occupancies throughout the Commonwealth.

Boston, the largest city in the Commonwealth, reported 521 carbon monoxide incidents, the most CO incidents of any one community where above normal levels of carbon monoxide were found in 2007. The City of Springfield reported the second most CO incidents in 2007, 159 CO calls. The next five cities in terms of the number of carbon monoxide calls reported were: Lowell, 129 calls, Malden, 93 calls, Worcester, 86 calls, Methuen, 85 calls, and Billerica reported 67 carbon monoxide incidents in 2007.

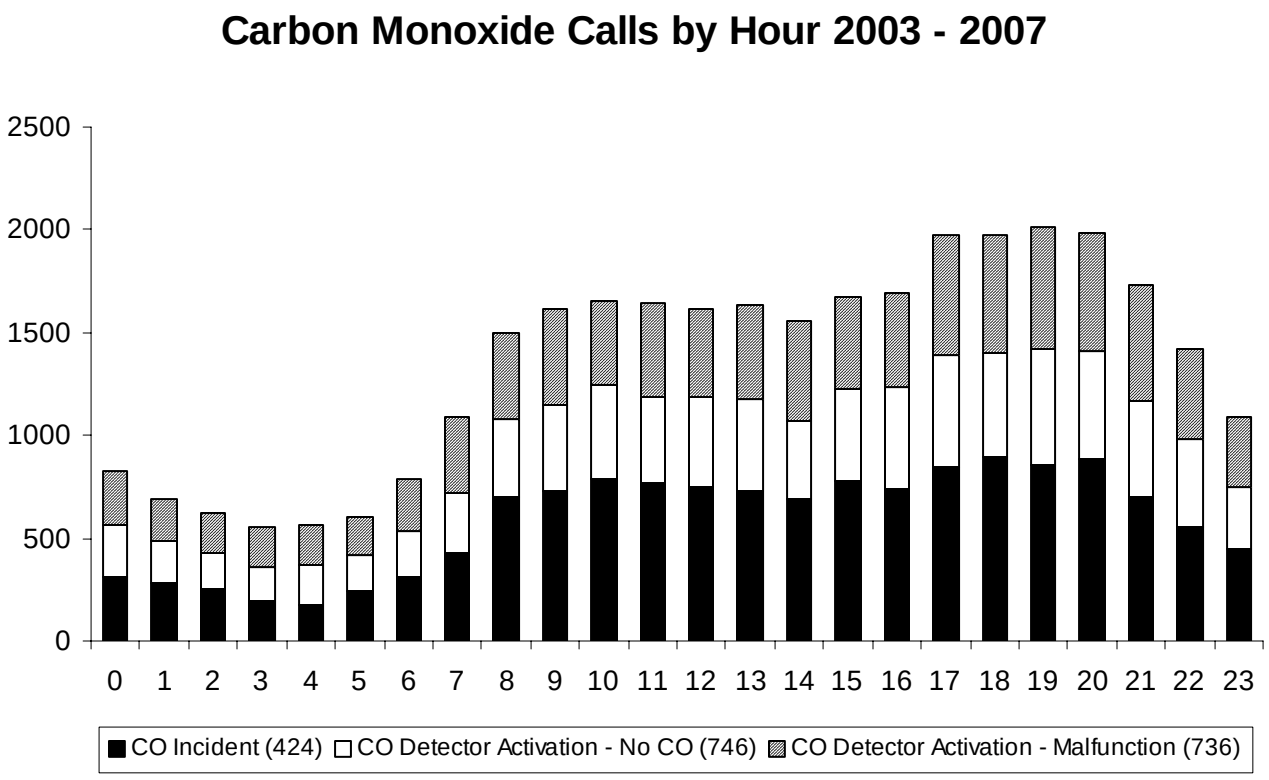
A CO detector activation is when a CO detector activated in response to pollution, an unknown trigger or a non-threatening situation. Fire departments responded to 7,249 CO detector activations. In version 5, these types of calls are split into two categories: CO detector activation due to malfunction and CO detector activation – no CO found. Two hundred and thirty-two (232) fire departments reported 3,622 CO detector activations due to malfunction. While 229 fire departments reported 3,627 CO detector activations with no CO found after investigation.

Finding little or no CO when the fire department arrives does not prove conclusively that no problem existed. An appliance may have released large quantities of CO at one particular stage in its operation or someone may have vented the house with fresh air from the outside. Knowledgeable repair people must check out the equipment.

[74] Carbon monoxide hazards = Incident Type – 424.
[75] Carbon monoxide detector activation due to a malfunction = Incident Type – 736.
[76] Carbon monoxide detector activation, no CO = Incident Type – 746.

97% of All CO Incidents Occur in Residences
Ninety-seven percent (97%) of all carbon monoxide calls occurred in residential occupancies. Mercantile and business properties are the next leading property use for CO calls accounting for 1% of the incidents. Institutional facilities and public assembly properties each also accounted for 1% of these calls. Educational facilities, storage facilities, basic industrial, manufacturing and processing facilities and special properties each accounted for less than 1% of the carbon monoxide calls in 2007.

Almost 1/2 of All CO Calls Occur During the Winter
Forty-nine percent (49%) of all the CO calls that occurred in 2007 happened during the colder months of November, December, January and February. Most CO calls occurred between the hours of 9:00 a.m. and 1:00 p.m. and between 4:00 p.m. and 9:00 p.m.



These seem to be the times when most people are awake and doing things around the house or coming home from work or school. This would also be the time that people would turn the heat up. Heating equipment is a leading cause of carbon monoxide incidents.

According to the U.S. Consumer Product Safety Commission (CPSC), an acceptable level of CO is a 15 PPM average over a time span of eight hours or a 22 PPM average for an hour. If you have 1,000 PPM for over thirty minutes, it puts you at a high level of danger in the form of a collapse into a coma or permanent brain damage.

Only a special gas meter can detect if carbon monoxide is present and in what quantities. Because you can't see it or smell it, you may not know that it is there. Human senses don't provide enough information. Carbon monoxide is a by-product of combustion. It is one of the toxic gases produced in a fire. Many people falsely believe they will awaken to the smell of smoke. In fact, when a person falls asleep, so does their sense of smell. Carbon monoxide usually causes fatigue and will put someone into a deeper sleep so that people are less likely to awaken before their life slips away. This is why smoke detectors are so important. Large amounts of carbon monoxide are produced in a fire.

Mapping the Fire Experience

Boston & Worcester Had the Most Reported Fires
Boston reported having the most fires, with 4,768 in 2007. Worcester had the second highest number of reported fires at 1,389. Springfield (1,311), Quincy (861), Cambridge (669), and Lowell (630) rounded out the top six communities in the Commonwealth in terms of reported fires.

However if we look at the number of reported fires compared to the total population of the individual community we get a different picture. One would expect that the bigger cities and towns to have more fires because of their populations. When we calculate the rate of reported fires for every 10,000 people in a given municipality, the ranking changes. Usually the top communities in terms of number of reported fires fall towards the bottom of the rankings. Communities with one, two or three reported fires take over the top spots. These communities may have a rate that far exceeds that actual number of fires that they reported. For example towns like Goshen, Hancock and Savoy all reported one fire in 2007 but their small populations cause them to have a high fires per 10,000 population.

For a listing and breakdown of the number of reported fires and arsons by community please go to the appendix.

2007 Fires per 10,000 Population by Community, on page 164, displays the rate of reported fires by community for every 10,000 of that community's population. The map's legend indicates to which group a municipality belongs. Cities and towns that are blank had reported no fires or failed to report at all. The more shading a community shows the more fires per 10,000 people were reported from that municipality. These legend symbols are consistent through the other three maps.

Middleton had the highest rate of 274 reported fires per 10,000 population. Next highest was Topsfield with 187 fires per 10,000 population; Berlin had 181; Tolland had 141; Provincetown had 137; and Clinton also had 137 fires per 10,000 population.

Boston & Springfield Had the Most Reported Structure Fires
Boston reported having the most structure fires, with 2,910 in 2007. Springfield had the second highest number of reported structure fires at 741. Worcester (700), Cambridge (523), Lowell (372) and Revere (327) rounded out the top six communities in the Commonwealth in terms of reported structure fires.

2007 Structure Fires per 10,000 Population by Community, on page 165, displays the rate of reported structure fires by community for every 10,000 of that community's population. The more shading a community shows the more structure fires per 10,000 people were reported from that municipality. Cities and towns that are blank did not report any structure fires or failed to report at all.

Middleton, with 160 structure fires, had the highest rate of 207 structure fires per 10,000 population. Topsfield was the next highest with 74 structure fires and 120 structure fires per 10,000 population; Great Barrington had 105; Conway had 88; and Stoughton had 85 structure fires per 10,000 population.

Boston & Springfield Had the Most Reported Residential Building Fires
Boston reported having the most residential building fires, with 2,434 in 2007. Springfield had the second highest number of reported building fires at 642. Worcester (603), Cambridge (410), Lowell (305), and Framingham (305) rounded out the top six communities in the Commonwealth in terms of reported residential building fires.

2007 Residential Building Fires per 10,000 Population by Community, on page 166, displays the rate of reported building fires by community for every 10,000 of that community's population. The more shading a community shows the more residential building fires per 10,000 people were reported from that municipality. Cities and towns that are blank did not report any residential building fires or failed to report at all.

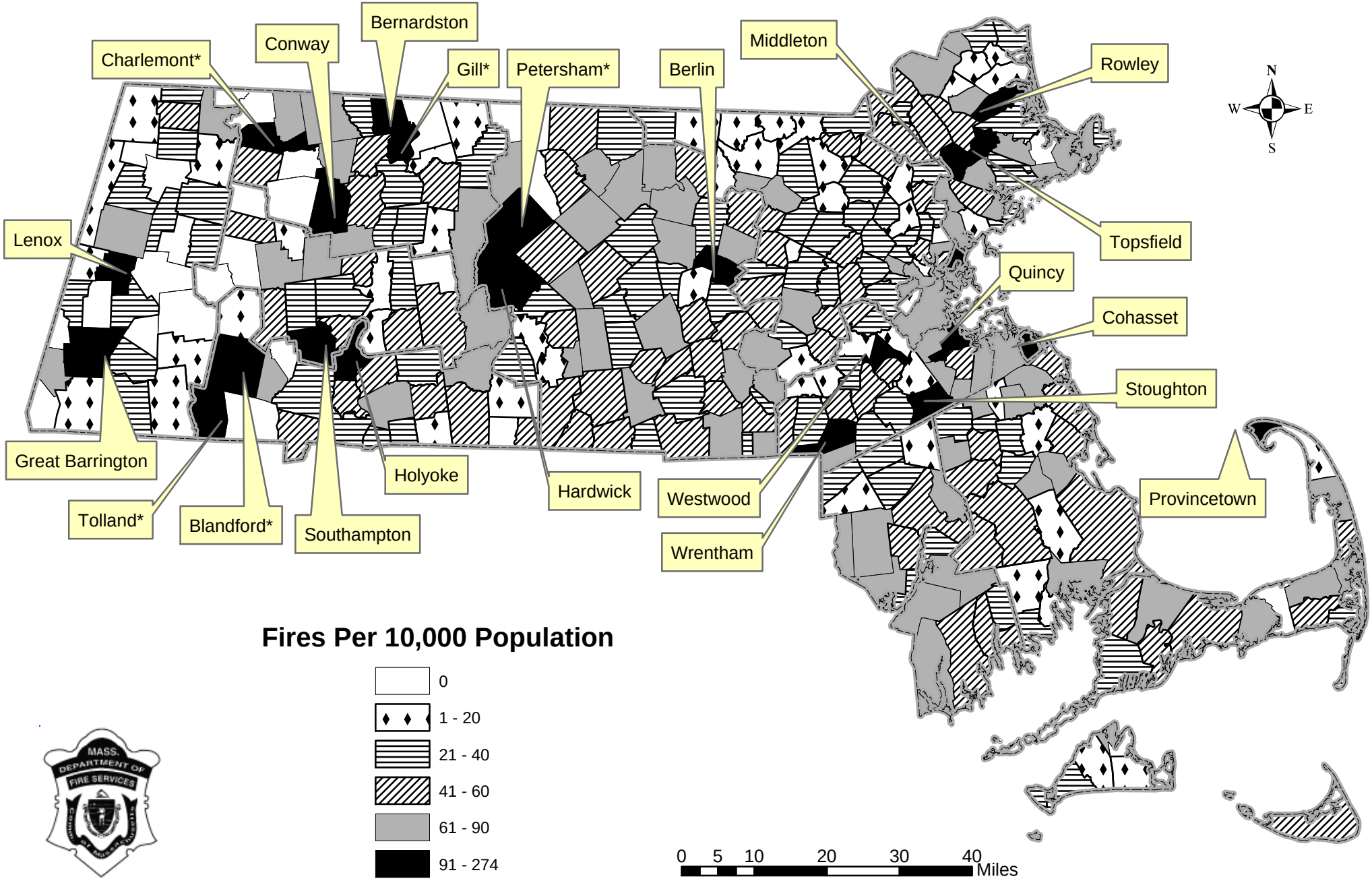
Middleton, with 142 residential building fires, had the highest rate of 183 residential building fires per 10,000 population. Next highest was Topsfield with 96 residential building fires per 10,000 population; Great Barrington had 84; Conway had 83; Lenox had 65; and Clinton had 63 residential building fires per 10,000 population.

Boston & Haverhill Had the Most Reported Arsons
Boston reported having the most arsons, with 107 in 2007. Haverhill had the second highest number of reported arsons at 63. Lawrence (43), Fall River (35), Taunton (31), and New Bedford (29) rounded out the top six communities in the Commonwealth in terms of reported arsons.

2007 Arsons per 10,000 Population by Community, on page 167, displays the rate of the total reported arsons by community for every 10,000 of that community's population. The more shading a community shows the more arsons per 10,000 people were reported from that municipality. Cities and towns that are blank had no reported of arsons or failed to report at all.

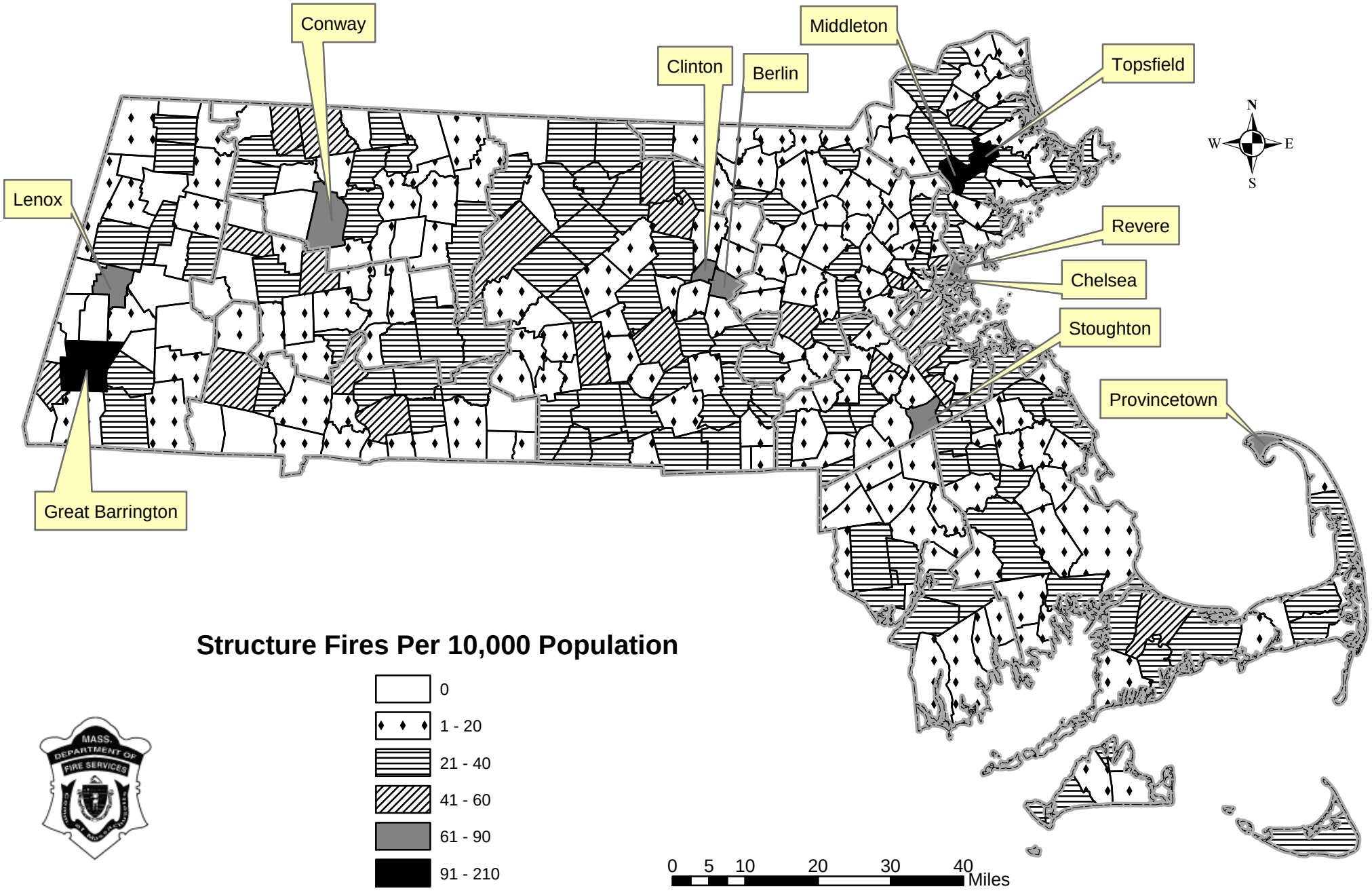
Haverhill, with 63 arsons, had the highest rate of any department reporting more than five arsons, with 11 reported arsons per 10,000 population. Next highest was Ware with 10 arsons per 10,000 population; Topsfield also had 10; Kingston had eight; Medfield had eight, and Yarmouth also had eight arsons per 10,000 population.

2007 Fires by 10,000 Population by Community

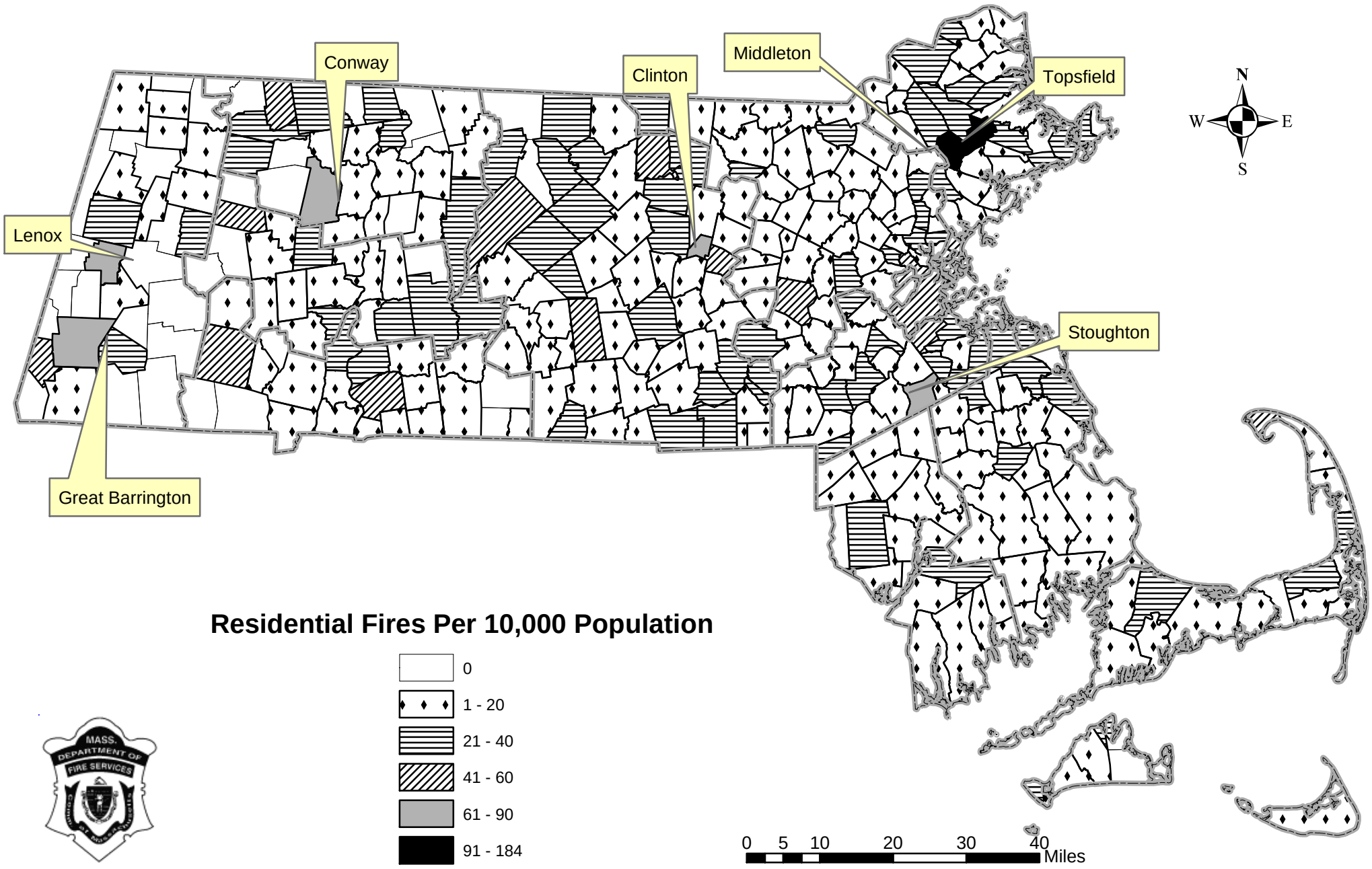


*These communities reported 15 fires or less in 2007.

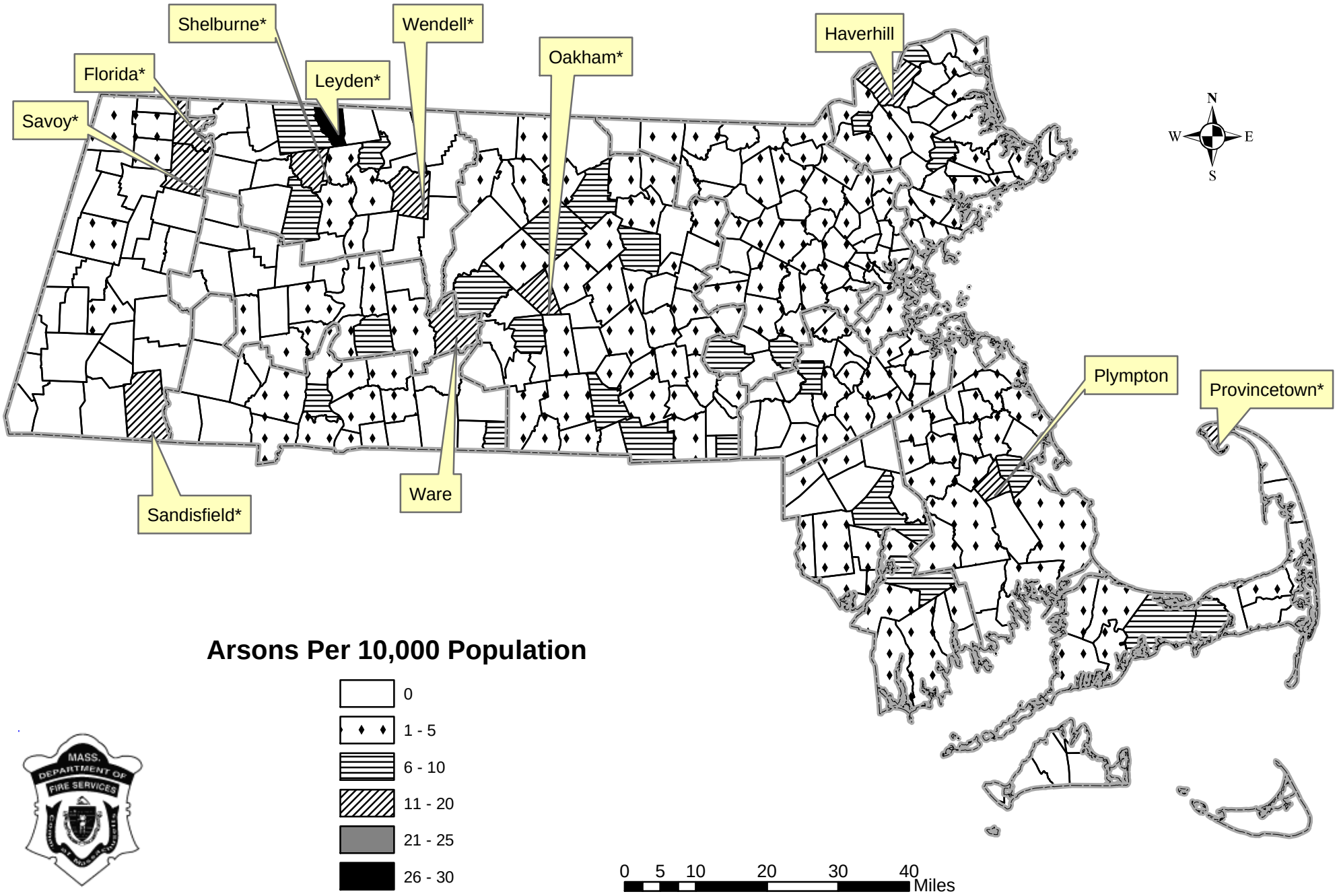
2007 Structure Fires by 10,000 Population by Community



2007 Residential Fires by 10,000 Poulation by Community



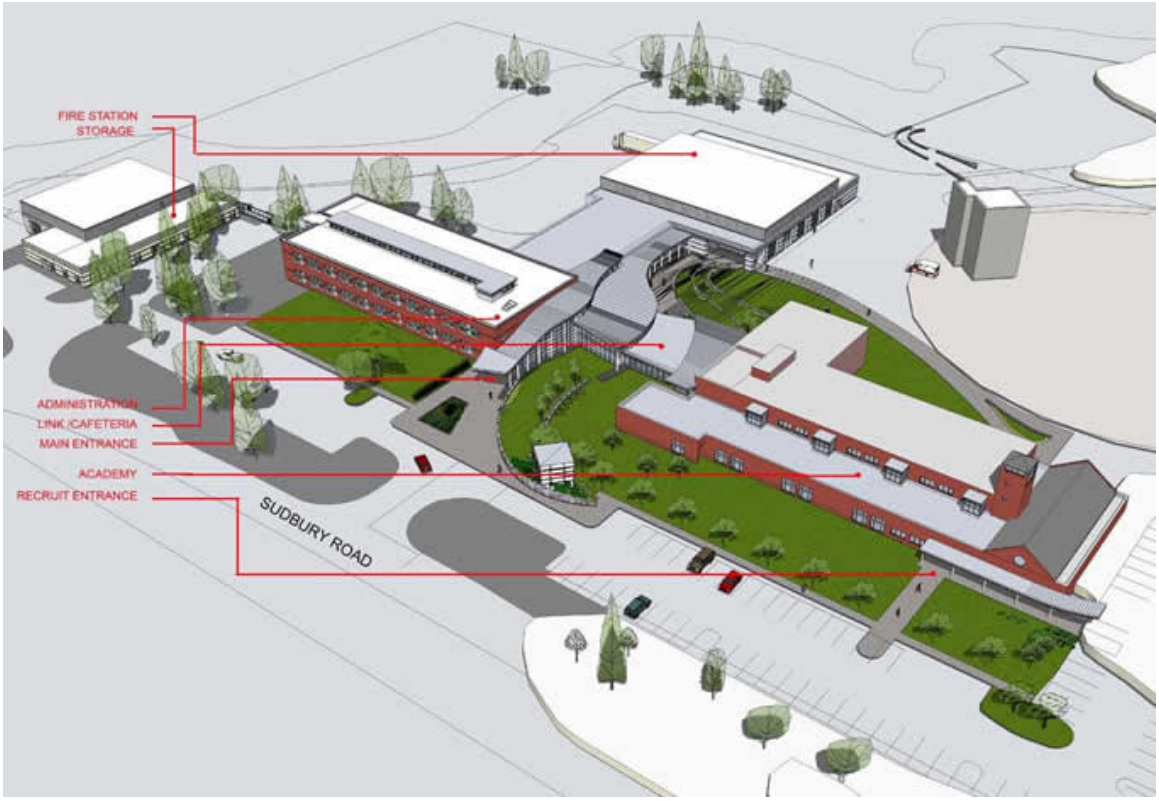
2007 Arsons by 10,000 Population by Community



Massachusetts Fire Incident Reporting System 2007

* These communities reported 5 or less arsons in 2007

Unveiling of the MA Fallen Firefighters Memorial on September 9, 2007



Overview of DFS construction project started in 2007.

Appendix

2007 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Abington	106	49	12	45	0	0	0	1	$1,147,550
Acton	75	32	4	39	2	0	0	1	$312,800
Acushnet	25	11	4	10	0	0	0	0	$538,122
Adams	30	18	4	8	0	0	0	1	$141,200
Agawam	89	48	10	31	0	1	0	0	$1,036,280
Alford	0	0	0	0	0	0	0	0	$0
Amesbury	53	31	4	18	0	1	0	0	$64,273
Amherst	105	49	10	46	0	2	0	3	$464,210
Andover	184	57	19	108	0	1	0	0	$675,081
Aquinnah	1	1	0	0	0	0	0	0	$50,000
Arlington	103	48	5	50	1	0	0	0	$138,450
Ashburnham	19	13	2	4	0	0	0	0	$0
Ashby	7	6	0	1	0	0	0	0	$2,500
Ashfield	Fire Department in Good Standing; Certified No Fire To Report								
Ashland	51	13	14	24	0	2	0	1	$32,500
Athol	78	39	10	29	0	2	0	1	$365,500
Attleboro	64	21	10	33	1	0	0	0	$287,000
Auburn	80	29	21	30	0	0	0	0	$737,174
Avon	58	10	14	34	0	0	0	0	$232,420
Ayer	45	20	4	21	0	0	0	0	$652,554
Barnstable Fire Districts									
Barnstable	*23*	*8*	*4*	*11*	*0*	*2*	*0*	*0*	*$55,500*
C.O.M.M.	*88*	*42*	*9*	*37*	*2*	*0*	*0*	*0*	*$346,850*
Cotuit	*3*	*2*	*0*	*1*	*0*	*0*	*0*	*0*	*$2,900*
Hyannis	*134*	*47*	*13*	*74*	*1*	*12*	*0*	*1*	*$945,585*
West Barnstable	*10*	*3*	*3*	*4*	*0*	*0*	*0*	*0*	*$0*
Barre	28	13	4	11	0	0	0	0	$60,000
Becket	0	0	0	0	0	0	0	0	$0
Bedford	40	18	7	15	0	2	0	2	$422,050
Belchertown	62	30	5	27	0	0	0	0	$340,000
Bellingham	83	33	12	38	0	2	0	0	$754,600
Belmont	162	118	3	41	0	0	0	3	$133,711
Berkley	17	5	6	6	0	0	0	0	$0
Berlin	43	16	10	17	0	1	0	1	$25,575
Bernardston	24	7	9	8	0	0	0	0	$294,000
Beverly	160	71	14	75	0	0	0	0	$3,309,100

2007 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Abington	4	0	0	4	0	0	0	0	$0
Acton	3	0	0	3	0	0	0	0	$2,000
Acushnet	2	0	2	0	0	0	0	0	$34,250
Adams	3	0	0	3	0	0	0	0	$0
Agawam	4	3	0	1	0	0	0	0	$12,000
Alford	0	0	0	0	0	0	0	0	$0
Amesbury	0	0	0	0	0	0	0	0	$0
Amherst	14	2	0	12	0	0	0	0	$0
Andover	3	2	0	1	0	0	0	0	$300
Aquinnah	0	0	0	0	0	0	0	0	$0
Arlington	9	1	0	8	0	0	0	0	$0
Ashburnham	0	0	0	0	0	0	0	0	$0
Ashby	0	0	0	0	0	0	0	0	$0
Ashfield	Fire Department in Good Standing; Certified No Fire To Report								
Ashland	0	0	0	0	0	0	0	0	$0
Athol	4	2	1	1	0	0	0	0	$0
Attleboro	0	0	0	0	0	0	0	0	$0
Auburn	1	0	0	1	0	0	0	0	$0
Avon	1	0	1	0	0	0	0	0	$1,000
Ayer	2	1	0	1	0	0	0	0	$0
Barnstable Fire Districts									
Barnstable	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Cotuit	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
C.O.M.M.	*4*	*0*	*0*	*4*	*0*	*0*	*0*	*0*	*$0*
Hyannis	*20*	*2*	*2*	*16*	*0*	*0*	*0*	*0*	*$3,610*
West Barnstable	*1*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*$0*
Barre	1	0	0	1	0	0	0	0	$0
Becket	0	0	0	0	0	0	0	0	$0
Bedford	2	0	0	2	0	0	0	0	$0
Belchertown	4	2	0	2	0	0	0	0	$0
Bellingham	0	0	0	0	0	0	0	0	$0
Belmont	10	2	0	8	0	0	0	0	$1
Berkley	2	1	0	1	0	0	0	0	$0
Berlin	1	0	0	1	0	0	0	0	$0
Bernardston	0	0	0	0	0	0	0	0	$0
Beverly	5	2	0	3	0	0	0	0	$2,050

2007 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Billerica	147	55	16	76	0	2	0	6	$436,097
Blackstone	53	17	4	32	0	0	0	2	$0
Blandford	12	6	5	1	0	1	0	1	$515,300
Bolton	30	8	2	20	0	0	0	0	$34,500
Boston	4,915	2,966	358	1,591	9	35	2	16	$34,070,401
Bourne	94	38	14	42	0	0	0	10	$3,112,465
Boxborough	24	2	10	12	0	0	0	0	$83,500
Boxford	46	29	6	11	0	2	0	0	$1,425,000
Boylston	3	1	1	1	0	0	0	0	$17,000
Braintree	143	31	23	89	0	1	0	6	$1,717,501
Brewster	63	33	1	29	0	0	0	1	$344,850
Bridgewater	120	46	12	62	0	1	0	1	$439,030
Brimfield	1	0	1	0	0	0	0	0	$0
Brockton	311	211	59	41	1	20	0	13	$2,709,360
Brookfield	1	1	0	0	0	0	0	0	$0
Brookline	29	27	1	1	1	1	0	1	$1,153,600
Buckland	Fire Department in Good Standing; Certified No Fire To Report								
Burlington	91	34	14	43	0	0	0	0	$402,101
Cambridge	669	523	20	126	0	3	0	14	$1,933,045
Canton	39	18	10	11	0	4	0	1	$1,529,500
Carlisle	1	1	0	0	0	0	0	0	$475,000
Carver	11	4	7	0	0	0	0	0	$82,700
Charlemont	16	4	0	12	0	0	0	0	$7,211
Charlton	63	28	11	24	0	0	0	0	$316,730
Chatham	23	9	1	13	0	2	0	0	$8,655
Chelmsford	41	28	9	4	0	0	0	3	$2,900,350
Chelsea	326	212	23	91	1	8	0	49	$1,987,005
Cheshire	0	0	0	0	0	0	0	0	$0
Chester	6	3	0	3	0	0	0	1	$205,000
Chesterfield	10	4	0	6	0	0	0	0	$0
Chicopee	264	153	26	85	1	5	0	6	$1,379,811
Chilmark	3	3	0	0	0	0	0	0	$629,500
Clarksburg	4	0	0	4	0	0	0	0	$0
Clinton	184	110	2	72	0	2	0	1	$870,750
Cohasset	68	24	2	42	0	0	0	0	$0

2007 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Billerica	2	0	0	2	0	0	0	0	$0
Blackstone	6	1	0	5	0	0	0	0	$0
Blandford	0	0	0	0	0	0	0	0	$0
Bolton	0	0	0	0	0	0	0	0	$0
Boston	109	54	14	41	0	8	0	2	$847,302
Bourne	6	1	1	4	0	0	0	0	$3,800
Boxborough	1	0	0	1	0	0	0	0	$0
Boxford	2	1	0	1	0	0	0	0	$5,000
Boylston	0	0	0	0	0	0	0	0	$0
Braintree	8	0	0	8	0	0	0	0	$0
Brewster	2	0	0	2	0	0	0	0	$0
Bridgewater	3	2	0	1	0	0	0	0	$5,300
Brimfield	0	0	0	0	0	0	0	0	$0
Brockton	18	13	4	1	0	1	0	4	$362,000
Brookfield	0	0	0	0	0	0	0	0	$0
Brookline	0	0	0	0	0	0	0	0	$0
Buckland	Fire Department in Good Standing; Certified No Fire To Report								
Burlington	2	0	0	2	0	0	0	0	$0
Cambridge	7	5	0	2	0	0	0	0	$1,300
Canton	1	1	0	0	0	2	0	1	$250,000
Carlisle	0	0	0	0	0	0	0	0	$0
Carver	0	0	0	0	0	0	0	0	$0
Charlemont	0	0	0	0	0	0	0	0	$0
Charlton	2	0	0	2	0	0	0	0	$0
Chatham	0	0	0	0	0	0	0	0	$0
Chelmsford	1	1	0	0	0	0	0	0	$2,000
Chelsea	16	11	0	5	0	0	0	3	$157,275
Cheshire	0	0	0	0	0	0	0	0	$0
Chester	0	0	0	0	0	0	0	0	$0
Chesterfield	0	0	0	0	0	0	0	0	$0
Chicopee	14	5	0	9	0	0	0	0	$2,000
Chilmark	0	0	0	0	0	0	0	0	$0
Clarksburg	0	0	0	0	0	0	0	0	$0
Clinton	5	0	0	5	0	0	0	0	$0
Cohasset	2	0	0	2	0	0	0	0	$0

2007 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Colrain	16	10	1	5	0	0	0	0	$0
Concord	64	28	6	30	0	2	0	0	$779,455
Conway	20	16	0	4	0	0	0	0	$584,680
Cummington	5	5	0	0	0	1	0	0	$29,500
Dalton	19	14	1	4	0	1	0	0	$30,750
Danvers	186	55	13	118	0	1	0	2	$11,600,000
Dartmouth Fire Districts									
Dartmouth #1	*45*	*19*	*3*	*23*	*0*	*0*	*0*	*0*	*$126,000*
Dartmouth #2	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Dartmouth #3	*135*	*7*	*16*	*112*	*0*	*0*	*0*	*0*	*$0*
Dedham	8	7	0	1	0	2	0	2	$670,000
Deerfield Fire Districts									
Deerfield	*3*	*1*	*0*	*2*	*0*	*0*	*0*	*0*	*$0*
South Deerfield	*18*	*11*	*1*	*6*	*0*	*0*	*0*	*0*	*$17,000*
Dennis	0	0	0	0	0	0	0	0	$0
Devens	16	5	3	8	0	0	0	0	$13,501
Dighton	31	13	3	15	0	1	0	0	$142,000
Douglas	33	16	2	15	0	0	0	0	$0
Dover	4	4	0	0	0	0	0	0	$2,700
Dracut	93	32	9	52	0	0	0	0	$464,110
Dudley	46	22	2	22	0	0	0	1	$91,100
Dunstable	1	1	0	0	0	0	0	0	$0
Duxbury	61	25	10	26	0	0	0	1	$416,050
East Bridgewater	61	33	5	23	0	1	0	0	$196,000
East Brookfield	16	4	3	9	0	0	0	1	$334,000
East Longmeadow	41	19	6	16	0	1	0	1	$6,172,100
Eastham	24	16	2	6	0	3	0	0	$250,000
Easthampton	85	56	8	21	0	0	0	3	$1,075,525
Easton	13	9	3	1	1	9	0	1	$1,223,125
Edgartown	3	1	0	2	0	0	0	0	$0
Egremont	10	8	2	0	0	0	0	0	$2,700
Erving[1]	Non-reporting Community								
Essex	0	0	0	0	0	0	0	0	$0
Everett	176	102	17	57	0	6	0	7	$3,034,255
Fairhaven	87	25	15	47	0	6	0	3	$675,676
Fall River	589	245	56	288	0	18	0	12	$1,877,085

[1] Erving did have 1 abandoned paper mill fire, but they did not submit a report to MFIRS.

2007 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Colrain	1	1	0	0	0	0	0	0	$0
Concord	5	2	0	3	0	0	0	0	$1,100
Conway	1	1	0	0	0	0	0	0	$0
Cummington	0	0	0	0	0	0	0	0	$0
Dalton	0	0	0	0	0	0	0	0	$0
Danvers	0	0	0	0	0	0	0	0	$0
Dartmouth Fire Districts									
Dartmouth #1	*2*	*0*	*0*	*2*	*0*	*0*	*0*	*0*	*$0*
Dartmouth #2	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Dartmouth #3	*8*	*0*	*1*	*7*	*0*	*0*	*0*	*0*	*$0*
Dedham	0	0	0	0	0	0	0	0	$0
Deerfield Fire Districts									
Deerfield	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
South Deerfield	*1*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*$0*
Dennis	0	0	0	0	0	0	0	0	$0
Devens	0	0	0	0	0	0	0	0	$0
Dighton	1	0	0	1	0	0	0	0	$0
Douglas	4	0	0	4	0	0	0	0	$0
Dover	0	0	0	0	0	0	0	0	$0
Dracut	5	2	0	3	0	0	0	0	$11,050
Dudley	3	0	1	2	0	0	0	0	$0
Dunstable	0	0	0	0	0	0	0	0	$0
Duxbury	0	0	0	0	0	0	0	0	$0
East Bridgewater	1	1	0	0	0	0	0	0	$0
East Brookfield	0	0	0	0	0	0	0	0	$0
East Longmeadow	3	1	0	2	0	0	0	1	$6,100,000
Eastham	0	0	0	0	0	0	0	0	$0
Easthampton	1	0	0	1	0	0	0	0	$0
Easton	0	0	0	0	0	0	0	0	$0
Edgartown	0	0	0	0	0	0	0	0	$0
Egremont	0	0	0	0	0	0	0	0	$0
Erving[2]	Non-reporting Community								
Essex	0	0	0	0	0	0	0	0	$0
Everett	10	8	1	1	0	0	0	2	$686,105
Fairhaven	0	0	0	0	0	0	0	0	$0
Fall River	35	13	4	18	0	4	0	2	$143,250

[2] The paper mill fire was an intentionally set fire. No report was submitted to MFIRS.

2007 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Falmouth	86	41	14	31	0	6	0	1	$1,255,105
Fitchburg	336	216	30	90	0	11	0	2	$921,960
Florida	5	1	2	2	0	0	0	0	$2,500
Foxborough	56	16	11	29	0	0	0	0	$370,120
Framingham	477	319	37	121	0	7	0	7	$1,935,126
Franklin	89	24	6	59	0	0	0	1	$273,000
Freetown	60	25	14	21	0	1	0	0	$617,050
Gardner	130	52	19	59	0	0	0	1	$794,920
Georgetown	50	36	3	11	0	0	0	2	$1,500,030
Gill	13	4	3	6	0	0	0	0	$0
Gloucester	217	95	11	111	1	2	0	4	$400,400
Goshen	1	1	0	0	0	0	0	0	$3,000
Gosnold	0	0	0	0	0	0	0	0	$0
Grafton	62	29	12	21	0	0	0	0	$230,000
Granby	29	14	1	14	0	1	0	1	$246,000
Granville	Non-reporting Community								
Great Barrington	97	79	2	16	0	0	0	0	$152,500
Greenfield	104	38	12	54	0	2	0	8	$448,000
Groton	16	11	0	5	0	0	0	0	$268,000
Groveland	3	3	0	0	0	0	0	0	$201,500
Hadley	7	7	0	0	0	0	0	0	$675,913
Halifax	30	24	3	3	0	2	0	1	$168,239
Hamilton	52	27	5	20	0	0	0	2	$17,000
Hampden	5	5	0	0	0	0	0	0	$43,000
Hancock	1	1	0	0	0	0	0	0	$700
Hanover	91	18	11	62	0	0	0	1	$4,100
Hanson	33	9	2	22	0	0	0	0	$0
Hardwick	33	4	2	27	0	0	0	0	$27,000
Harvard	25	5	2	18	0	0	0	0	$0
Harwich	63	26	7	30	0	3	0	5	$588,185
Hatfield	18	3	2	13	0	0	0	0	$0
Haverhill	374	225	25	124	0	3	0	1	$1,997,150
Hawley	2	1	1	0	0	0	0	0	$3,500
Heath	5	4	1	0	0	0	0	0	$0
Hingham	120	69	6	45	1	2	0	4	$2,166,530

2007 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Falmouth	9	3	1	5	0	1	0	0	$8,270
Fitchburg	16	5	1	10	0	1	0	0	$110,000
Florida	1	0	0	1	0	0	0	0	$0
Foxborough	0	0	0	0	0	0	0	0	$0
Framingham	7	5	1	1	0	0	0	0	$129,500
Franklin	0	0	0	0	0	0	0	0	$0
Freetown	5	1	2	2	0	0	0	0	$15,100
Gardner	5	3	1	1	0	0	0	0	$3,120
Georgetown	0	0	0	0	0	0	0	0	$0
Gill	1	0	0	1	0	0	0	0	$0
Gloucester	8	1	0	7	0	0	0	0	$0
Goshen	0	0	0	0	0	0	0	0	$0
Gosnold	0	0	0	0	0	0	0	0	$0
Grafton	1	0	0	1	0	0	0	0	$0
Granby	5	0	0	5	0	0	0	0	$0
Granville	Non-reporting Community								
Great Barrington	0	0	0	0	0	0	0	0	$0
Greenfield	4	1	1	2	0	1	0	0	$60,500
Groton	0	0	0	0	0	0	0	0	$0
Groveland	0	0	0	0	0	0	0	0	$0
Hadley	0	0	0	0	0	0	0	0	$0
Halifax	2	1	1	0	0	0	0	1	$104,134
Hamilton	4	0	0	4	0	0	0	0	$0
Hampden	0	0	0	0	0	0	0	0	$0
Hancock	0	0	0	0	0	0	0	0	$0
Hanover	1	0	1	0	0	0	0	0	$4,000
Hanson	4	2	0	2	0	0	0	0	$0
Hardwick	2	0	0	2	0	0	0	0	$0
Harvard	1	0	0	1	0	0	0	0	$0
Harwich	0	0	0	0	0	0	0	0	$0
Hatfield	0	0	0	0	0	0	0	0	$0
Haverhill	63	4	0	59	0	0	0	0	$1,700
Hawley	0	0	0	0	0	0	0	0	$0
Heath	0	0	0	0	0	0	0	0	$0
Hingham	1	0	0	1	0	0	0	0	$0

2007 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Hinsdale	0	0	0	0	0	0	0	0	$0
Holbrook	94	28	4	62	0	0	0	1	$192,975
Holden	59	36	7	16	0	3	0	1	$0
Holland	12	3	1	8	0	0	0	0	$0
Holliston	6	5	1	0	0	0	0	0	$107,535
Holyoke	422	181	44	197	0	0	0	3	$468,940
Hopedale	20	18	2	0	0	1	0	0	$275,375
Hopkinton	87	47	16	24	1	3	0	0	$972,240
Hubbardston	25	12	2	11	0	0	0	0	$24,500
Hudson	64	21	8	35	0	1	0	0	$807,750
Hull	33	20	2	11	0	0	0	0	$1,113,500
Huntington	12	4	0	8	0	0	0	0	$200,000
Ipswich	39	20	1	18	0	0	0	1	$259,650
Kingston	87	22	17	48	0	0	0	0	$113,000
Lake Pleasant	0	0	0	0	0	0	0	0	$0
Lakeville	40	12	3	25	0	0	0	0	$0
Lancaster	23	9	5	9	0	0	0	0	$376,000
Lanesborough	10	2	0	8	0	1	0	0	$40,000
Lawrence	282	134	67	81	0	0	0	9	$5,081,917
Lee	12	9	3	0	0	0	0	2	$1,066,800
Leicester	35	11	1	23	0	0	0	1	$668,000
Lenox	49	37	2	10	0	2	0	1	$1,097,500
Leominster	290	180	27	83	0	4	0	4	$53,008
Leverett	5	0	0	5	0	0	0	0	$0
Lexington	71	37	17	17	0	0	0	1	$633,786
Leyden	3	0	0	3	0	0	0	0	$0
Lincoln	37	18	3	16	0	0	0	0	$431,500
Littleton	50	24	12	14	0	0	0	0	$23,525
Logan Airport	100	14	7	79	0	0	0	0	$351,000
Longmeadow	41	21	3	17	0	0	0	0	$216,000
Lowell	630	372	46	212	0	0	1	4	$1,051,650
Ludlow	78	48	12	18	1	1	0	2	$860,450
Lunenburg	52	27	6	19	0	3	0	0	$199,610
Lynn	128	87	38	3	3	12	0	22	$1,407,800
Lynnfield	80	45	2	33	0	0	0	0	$540,200

2007 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Hinsdale	0	0	0	0	0	0	0	0	$0
Holbrook	5	1	1	3	0	0	0	0	$175,000
Holden	1	0	0	1	0	0	0	0	$0
Holland	2	0	0	2	0	0	0	0	$0
Holliston	0	0	0	0	0	0	0	0	$0
Holyoke	18	5	1	12	0	0	0	0	$500
Hopedale	0	0	0	0	0	0	0	0	$0
Hopkinton	7	1	0	6	0	0	0	0	$1,000
Hubbardston	3	0	0	3	0	0	0	0	$0
Hudson	1	1	0	0	0	1	0	0	$100
Hull	2	0	2	0	0	0	0	0	$5,000
Huntington	1	1	0	0	0	0	0	0	$200,000
Ipswich	0	0	0	0	0	0	0	0	$0
Kingston	10	0	0	10	0	0	0	0	$0
Lake Pleasant	0	0	0	0	0	0	0	0	$0
Lakeville	3	2	0	1	0	0	0	0	$0
Lancaster	0	0	0	0	0	0	0	0	$0
Lanesborough	0	0	0	0	0	0	0	0	$0
Lawrence	43	12	9	22	0	0	0	0	$52,820
Lee	1	1	0	0	0	0	0	1	$500,000
Leicester	0	0	0	0	0	0	0	0	$0
Lenox	0	0	0	0	0	0	0	0	$0
Leominster	4	2	0	2	0	0	0	1	$0
Leverett	0	0	0	0	0	0	0	0	$0
Lexington	5	2	0	3	0	0	0	0	$147
Leyden	2	0	0	2	0	0	0	0	$0
Lincoln	3	1	0	2	0	0	0	0	$0
Littleton	0	0	0	0	0	0	0	0	$0
Logan Airport FD	0	0	0	0	0	0	0	0	$0
Longmeadow	1	0	0	1	0	0	0	0	$0
Lowell	12	6	2	4	0	0	0	0	$0
Ludlow	2	1	0	1	1	0	0	0	$0
Lunenburg	2	0	0	2	0	0	0	0	$0
Lynn	4	4	0	0	2	2	0	0	$42,000
Lynnfield	1	1	0	0	0	0	0	0	$0

2007 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Malden	371	233	22	116	0	1	0	14	$323,000
Manchester	36	17	4	15	0	0	0	0	$0
Mansfield	62	12	13	37	0	0	0	3	$2,063,750
Marblehead	67	33	3	31	0	2	0	1	$172,085
Marion	4	3	1	0	0	0	0	0	$178,600
Marlborough	163	61	25	77	0	4	0	4	$1,242,750
Marshfield	135	57	6	72	2	1	0	3	$0
Mashpee	60	27	7	26	0	2	0	0	$675,480
Mattapoisett	14	4	3	7	1	0	0	0	$26,600
Maynard	8	8	0	0	0	0	0	1	$675,000
Medfield	45	20	4	21	0	0	0	1	$0
Medford	304	179	19	106	0	2	0	4	$569,300
Medway	9	6	1	2	0	0	0	0	$0
Melrose	25	18	3	4	0	3	0	1	$465,720
Mendon	24	8	3	13	0	0	0	1	$5,000
Merrimac	39	15	5	19	0	0	0	0	$0
Methuen	198	79	19	100	0	1	0	0	$943,500
Middleborough	95	40	15	40	0	0	0	0	$227,700
Middlefield	Non-reporting Community								
Middleton	212	160	6	46	0	0	0	0	$0
Milford	162	82	16	64	0	7	0	10	$1,060,830
Millbury	64	31	19	14	0	0	0	2	$626,330
Millis	2	1	0	1	0	0	0	0	$605,000
Millville	10	4	1	5	0	0	0	0	$1,000
Milton	225	137	16	72	0	0	0	9	$573,000
Monroe	Fire Department in Good Standing; Certified No Fire To Report								
Monson	35	13	4	18	0	0	0	0	$100,250
Montague Fire Districts									
Montague Center	*12*	*4*	*1*	*7*	*0*	*0*	*0*	*0*	*$2,000*
Turners Falls	*21*	*10*	*2*	*9*	*0*	*0*	*0*	*0*	*$1,191,975*
Monterey	2	2	0	0	0	0	0	0	$380,000
Montgomery	Non-reporting Community								
Nahant	7	1	0	6	0	0	0	0	$2,000
Nantucket	51	23	3	25	1	0	0	1	$279,000
Natick	143	80	16	47	0	2	0	1	$590,225
Needham	82	36	11	35	0	0	0	0	$7,603

2007 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Malden	1	0	1	0	0	0	0	0	$0
Manchester	1	0	0	1	0	0	0	0	$0
Mansfield	1	0	0	1	0	0	0	0	$500
Marblehead	0	0	0	0	0	0	0	0	$0
Marion	0	0	0	0	0	0	0	0	$0
Marlborough	4	3	1	0	0	0	0	0	$0
Marshfield	12	1	0	11	0	0	0	1	$0
Mashpee	3	1	1	1	0	0	0	0	$400
Mattapoisett	0	0	0	0	0	0	0	0	$0
Maynard	2	2	0	0	0	0	0	0	$75,000
Medfield	10	0	1	9	0	0	0	0	$0
Medford	13	4	1	8	0	0	0	0	$26,000
Medway	0	0	0	0	0	0	0	0	$0
Melrose	1	1	0	0	0	0	0	0	$6,000
Mendon	0	0	0	0	0	0	0	0	$0
Merrimac	4	0	0	4	0	0	0	0	$0
Methuen	2	0	1	1	0	0	0	0	$0
Middleborough	7	0	4	3	0	0	0	0	$2,000
Middlefield	Non-reporting Community								
Middleton	0	0	0	0	0	0	0	0	$0
Milford	3	0	1	2	0	0	0	0	$3,500
Millbury	1	1	0	0	0	0	0	0	$1,000
Millis	0	0	0	0	0	0	0	0	$0
Millville	0	0	0	0	0	0	0	0	$0
Milton	13	0	0	13	0	0	0	0	$0
Monroe	Fire Department in Good Standing; Certified No Fire To Report								
Monson	0	0	0	0	0	0	0	0	$0
Montague Fire Districts									
Montague Center	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Turners Falls	*2*	*0*	*0*	*2*	*0*	*0*	*0*	*0*	*$0*
Monterey	0	0	0	0	0	0	0	0	$0
Montgomery	Non-reporting Community								
Nahant	0	0	0	0	0	0	0	0	$0
Nantucket	0	0	0	0	0	0	0	0	$0
Natick	2	0	0	2	0	0	0	0	$0
Needham	5	1	0	4	0	0	0	0	$0

2007 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
New Ashford	0	0	0	0	0	0	0	0	$0
New Bedford	426	141	76	209	1	1	0	0	$714,740
New Braintree	2	0	2	0	0	0	0	0	$25,060
New Marlborough	5	3	0	2	0	0	0	0	$0
New Salem	7	2	0	5	0	0	0	0	$50,000
Newbury	11	3	3	5	0	0	0	0	$0
Newburyport	19	13	4	2	0	4	0	0	$672,350
Newton	194	106	31	57	0	3	0	10	$4,055,420
Norfolk	51	39	2	10	0	0	0	0	$549,000
North Adams	82	30	10	42	0	3	0	4	$555,671
North Andover	134	78	10	46	0	0	0	0	$1,020,160
North Attleboro	102	28	10	64	0	1	0	1	$251,700
North Brookfield	27	9	0	18	0	0	0	0	$113,000
North Reading	43	17	7	19	0	0	0	0	$289,500
Northampton	110	49	17	44	0	3	0	0	$913,503
Northborough	51	18	6	27	0	0	0	0	$841,900
Northbridge	66	31	6	29	0	2	0	0	$345,775
Northfield	Non-reporting Community								
Norton	56	8	8	40	0	1	0	0	$90,200
Norwell	63	27	9	27	0	0	0	0	$0
Norwood	142	47	16	79	0	1	0	5	$2,904,505
Oak Bluffs	0	0	0	0	0	0	0	0	$0
Oakham	14	4	1	9	0	0	0	0	$0
Orange	17	2	2	13	0	0	0	0	$0
Orleans	40	8	2	30	0	0	0	0	$0
Otis	2	2	0	0	0	0	0	0	$250,000
Oxford	82	27	16	39	0	3	0	0	$1,069,965
Palmer Fire Districts									
Bondsville	*8*	*2*	*1*	*5*	*0*	*1*	*0*	*0*	*$15,000*
Palmer	*58*	*20*	*14*	*24*	*0*	*0*	*0*	*0*	*$53,100*
Three Rivers	*9*	*4*	*1*	*4*	*0*	*0*	*0*	*0*	*$0*
Paxton	12	8	3	1	0	0	0	0	$178,500
Peabody	240	80	17	143	0	1	0	3	$3,209,750
Pelham	0	0	0	0	0	0	0	0	$0
Pembroke	25	15	7	3	0	0	0	0	$713,830
Pepperell	33	18	6	9	0	1	0	2	$214,850

2007 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
New Ashford	0	0	0	0	0	0	0	0	$0
New Bedford	29	11	14	4	0	0	0	0	$134,950
New Braintree	0	0	0	0	0	0	0	0	$0
New Marlborough	0	0	0	0	0	0	0	0	$0
New Salem	0	0	0	0	0	0	0	0	$0
Newbury	1	0	0	1	0	0	0	0	$0
Newburyport	1	1	0	0	0	0	0	0	$5,000
Newton	12	3	0	9	0	0	0	0	$3,000
Norfolk	0	0	0	0	0	0	0	0	$0
North Adams	5	0	0	5	0	0	0	0	$0
North Andover	1	0	0	1	0	0	0	0	$0
North Attleboro	2	0	0	2	0	0	0	0	$0
North Brookfield	4	0	0	4	0	0	0	0	$0
North Reading	2	1	0	1	0	0	0	0	$500
Northampton	2	1	0	1	0	0	0	0	$10,000
Northborough	3	0	3	0	0	0	0	0	$100,000
Northbridge	1	0	0	1	0	0	0	0	$0
Northfield	Non-reporting Community								
Norton	0	0	0	0	0	0	0	0	$0
Norwell	2	0	0	2	0	0	0	0	$0
Norwood	0	0	0	0	0	0	0	0	$0
Oak bluffs	0	0	0	0	0	0	0	0	$0
Oakham	2	0	0	2	0	0	0	0	$0
Orange	0	0	0	0	0	0	0	0	$0
Orleans	3	0	0	3	0	0	0	0	$0
Otis	0	0	0	0	0	0	0	0	$0
Oxford	7	2	3	2	0	0	0	0	$14,365
Palmer Fire Districts									
Bondsville	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Palmer	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Three Rivers	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Paxton	0	0	0	0	0	0	0	0	$0
Peabody	4	0	1	3	0	0	0	0	$1,500
Pelham	0	0	0	0	0	0	0	0	$0
Pembroke	3	2	0	1	0	0	0	0	$262,000
Pepperell	2	0	1	1	0	0	0	0	$0

2007 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Peru	3	2	0	1	0	0	0	0	$0
Petersham	12	7	0	5	0	0	0	0	$0
Phillipston	Fire Department in Good Standing; Certified No Fire To Report								
Pittsfield	318	162	31	125	1	5	0	6	$3,655,431
Plainfield	Fire Department in Good Standing; Certified No Fire To Report								
Plainville	51	19	4	28	0	2	0	0	$110,000
Plymouth	222	65	33	124	1	2	0	4	$1,516,112
Plympton	18	5	3	10	0	0	0	0	$360,750
Princeton	8	3	0	5	0	0	0	0	$0
Provincetown	47	25	5	17	0	0	0	1	$10,000
Quincy	861	293	51	517	0	2	0	36	$1,689,000
Randolph	249	140	24	85	2	5	0	1	$787,600
Raynham	100	23	20	57	0	0	0	3	$525,000
Reading	138	73	11	54	0	2	0	0	$172,800
Rehoboth	64	32	5	27	0	1	0	0	$10,000
Revere	486	327	26	133	1	2	0	5	$589,325
Richmond	2	0	1	1	0	0	0	0	$500
Rochester	7	6	1	0	0	0	0	1	$18,038,000
Rockland	18	14	1	3	0	2	0	0	$121,000
Rockport	22	7	1	14	0	0	0	0	$0
Rowe	Fire Department in Good Standing; Certified No Fire To Report								
Rowley	57	17	7	33	0	0	0	1	$197,450
Royalston	Non-reporting Community								
Russell	10	4	0	6	0	0	0	0	$0
Rutland	26	8	1	17	0	0	0	0	$126,650
Salem	300	97	20	183	3	1	0	0	$48,500
Salisbury	31	10	7	14	1	0	0	1	$406,503
Sandisfield	1	1	0	0	0	0	0	0	$550,000
Sandwich	126	84	14	28	0	5	0	0	$541,851
Saugus	221	62	14	145	0	0	0	8	$631,455
Savoy	1	1	0	0	0	0	0	0	$40,000
Scituate	74	26	3	45	0	0	0	1	$1,460,450
Seekonk	89	25	9	55	1	1	0	3	$2,106,700
Sharon	61	31	8	22	0	0	0	0	$73,052
Sheffield	4	2	0	2	0	0	0	0	$0

2007 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Peru	0	0	0	0	0	0	0	0	$0
Petersham	0	0	0	0	0	0	0	0	$0
Phillipston	Fire Department in Good Standing; Certified No Fire To Report								
Pittsfield	16	8	1	7	0	0	0	0	$46,350
Plainfield	Fire Department in Good Standing; Certified No Fire To Report								
Plainville	2	1	0	1	0	0	0	0	$0
Plymouth	6	2	0	4	0	0	0	0	$0
Plympton	3	0	0	3	0	0	0	0	$0
Princeton	1	0	0	1	0	0	0	0	$0
Provincetown	13	8	1	4	0	0	0	1	$10,000
Quincy	15	1	0	14	0	0	0	1	$0
Randolph	1	1	0	0	2	4	0	1	$130,000
Raynham	0	0	0	0	0	0	0	0	$0
Reading	7	1	0	6	0	0	0	0	$0
Rehoboth	3	0	0	3	0	0	0	0	$0
Revere	6	4	2	0	0	1	0	0	$65,500
Richmond	0	0	0	0	0	0	0	0	$0
Rochester	0	0	0	0	0	0	0	0	$0
Rockland	0	0	0	0	0	0	0	0	$0
Rockport	0	0	0	0	0	0	0	0	$0
Rowe	Fire Department in Good Standing; Certified No Fire To Report								
Rowley	2	1	0	1	0	0	0	0	$50
Royalston	Non-reporting Community								
Russell	0	0	0	0	0	0	0	0	$0
Rutland	2	0	0	2	0	0	0	0	$0
Salem	12	1	0	11	0	0	0	0	$0
Salisbury	1	0	0	1	1	0	0	0	$0
Sandisfield	1	1	0	0	0	0	0	0	$550,000
Sandwich	3	0	0	3	0	0	0	0	$0
Saugus	7	0	0	7	0	0	0	1	$500
Savoy	1	1	0	0	0	0	0	0	$40,000
Scituate	2	0	0	1	0	0	0	0	$0
Seekonk	6	1	0	5	0	0	0	0	$0
Sharon	1	0	0	1	0	0	0	0	$0
Sheffield	0	0	0	0	0	0	0	0	$0

2007 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Shelburne Fire Districts									
Shelburne	*5*	*2*	*1*	*2*	*0*	*0*	*0*	*1*	*$250,000*
Shelburne Falls	*10*	*2*	*0*	*8*	*0*	*0*	*0*	*0*	*$276,000*
Sherborn	23	7	2	14	0	0	0	0	$1,910
Shirley	2	1	1	0	0	0	0	0	$0
Shrewsbury	134	69	15	50	0	0	0	0	$688,950
Shutesbury	2	1	1	0	0	0	0	0	$4,050
Somerset	47	10	10	27	0	0	0	0	$295,350
Somerville	52	34	18	0	0	2	0	25	$19,701,575
South Hadley Fire Districts									
South Hadley #1	*1*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*$2,100*
South Hadley #2	*28*	*20*	*3*	*5*	*0*	*0*	*0*	*0*	*$9,100*
Southampton	65	7	1	57	0	5	0	0	$281,000
Southborough	39	19	8	12	0	2	0	0	$224,488
Southbridge	93	50	7	36	0	4	0	7	$1,510,650
Southwick	47	17	5	25	0	0	0	1	$817,000
Spencer	81	54	2	25	0	4	0	2	$535,000
Springfield	1,311	741	129	441	7	19	0	70	$6,062,811
Sterling	59	24	6	29	0	1	0	0	$369,325
Stockbridge	0	0	0	0	0	0	0	0	$0
Stoneham	88	78	5	5	1	0	0	0	$764,500
Stoughton	287	230	18	39	0	0	0	5	$603,050
Stow	27	8	4	15	0	1	0	0	$46,700
Sturbridge	47	16	7	24	0	0	0	0	$235,100
Sudbury	57	29	3	25	0	1	0	1	$111,000
Sunderland	10	4	1	5	0	0	0	0	$150,000
Sutton	17	6	4	7	0	0	0	0	$0
Swampscott	57	25	3	29	0	0	0	1	$91,002
Swansea	104	39	15	50	1	0	0	0	$0
Taunton	246	31	37	178	0	0	0	3	$760,000
Templeton	35	18	5	12	0	0	0	0	$220,000
Tewksbury	148	38	20	90	0	0	0	0	$890,710
Tisbury	26	15	3	8	0	0	0	0	$0
Tolland	6	0	0	6	0	0	0	0	$0
Topsfield	115	74	6	35	0	0	0	0	$0
Townsend	6	4	0	2	0	0	0	0	$200,300
Truro	2	2	0	0	0	0	0	0	$30,500

2007 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Shelburne Fire Districts									
Shelburne	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Shelburne Falls	*3*	*1*	*0*	*2*	*0*	*0*	*0*	*0*	*$276,000*
Sherborn	3	0	0	3	0	0	0	0	$0
Shirley	1	1	0	0	0	0	0	0	$0
Shrewsbury	3	0	1	2	0	0	0	0	$30,000
Shutesbury	0	0	0	0	0	0	0	0	$0
Somerset	3	1	1	1	0	0	0	0	$172,000
Somerville	5	3	2	0	0	0	0	0	$41,725
South Hadley Fire Districts									
South Hadley #1	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
South Hadley #2	*1*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*$0*
Southampton	1	0	0	1	0	0	0	0	$0
Southborough	2	1	0	1	0	0	0	0	$2,000
Southbridge	7	1	2	4	0	0	0	0	$194,000
Southwick	2	1	0	1	0	0	0	1	$50,000
Spencer	3	0	0	3	0	0	0	0	$0
Springfield	15	3	10	2	4	1	0	4	$112,200
Sterling	4	2	0	2	0	0	0	0	$278,000
Stockbridge	0	0	0	0	0	0	0	0	$0
Stoneham	0	0	0	0	0	0	0	0	$0
Stoughton	4	2	1	1	0	0	0	0	$50,000
Stow	0	0	0	0	0	0	0	0	$0
Sturbridge	2	0	0	2	0	0	0	0	$0
Sudbury	4	1	0	3	0	0	0	0	$1,000
Sunderland	1	0	0	1	0	0	0	0	$0
Sutton	1	0	0	1	0	0	0	0	$0
Swampscott	1	1	0	0	0	0	0	0	$0
Swansea	2	1	0	1	1	0	0	0	$0
Taunton	31	2	4	25	0	0	0	0	$0
Templeton	1	1	0	0	0	0	0	0	$0
Tewksbury	5	1	2	2	0	0	0	0	$1,300
Tisbury	0	0	0	0	0	0	0	0	$0
Tolland	0	0	0	0	0	0	0	0	$0
Topsfield	6	0	1	5	0	0	0	0	$0
Townsend	1	1	0	0	0	0	0	0	$0
Truro	0	0	0	0	0	0	0	0	$0

2007 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Tyngsborough	21	7	1	13	0	0	0	0	$17,000
Tyringham	0	0	0	0	0	0	0	0	$0
Upton	42	12	5	25	0	0	0	1	$42,375
Uxbridge	83	40	11	32	0	1	0	10	$26,658,450
Wakefield	65	43	18	4	0	1	0	0	$0
Wales	Fire Department in Good Standing; Certified No Fire To Report								
Walpole	134	82	8	44	0	1	0	0	$153,150
Waltham	220	67	23	130	0	5	0	10	$2,740,307
Ware	76	25	4	47	0	3	0	1	$176,568
Wareham Fire Districts									
Onset	*6*	*5*	*1*	*0*	*0*	*0*	*0*	*0*	*$0*
Wareham	*126*	*37*	*22*	*67*	*1*	*2*	*0*	*3*	*$816,110*
Warren	19	8	2	9	1	1	0	4	$235,700
Warwick	1	1	0	0	0	0	0	0	$0
Washington	0	0	0	0	0	0	0	0	$0
Watertown	79	35	7	37	0	2	0	8	$772,500
Wayland	38	14	4	20	0	1	0	0	$74,515
Webster	36	6	12	18	0	0	0	0	$1,000
Wellesley	135	90	13	32	0	0	0	1	$947,635
Wellfleet	20	6	3	11	0	0	0	0	$17,830
Wendell	5	1	0	4	0	0	0	0	$148,000
Wenham	16	6	3	7	0	0	0	0	$57,000
West Boylston	28	12	4	12	0	1	0	0	$1,700
West Bridgewater	45	15	8	22	0	1	0	0	$66,700
West Brookfield	3	3	0	0	0	0	0	0	$15,000
West Newbury	4	2	0	2	0	0	0	0	$0
West Springfield	128	45	24	59	0	1	0	6	$423,950
West Stockbridge	5	0	1	4	0	0	0	0	$0
West Tisbury	2	2	0	0	0	0	0	0	$0
Westborough	97	40	17	40	0	2	0	0	$313,600
Westfield	136	76	16	44	3	1	0	1	$2,087,257
Westford	57	24	7	26	1	1	0	2	$742,126
Westhampton	4	2	1	1	0	1	0	0	$10,000
Westminster	54	17	4	33	0	1	0	0	$204,600
Weston	66	33	7	26	0	0	0	0	$0
Westport	88	24	9	55	0	1	0	2	$1,386,950
Westwood	133	70	10	53	0	1	0	0	$249,000
Weymouth	470	209	31	230	0	4	0	15	$1,480,350

2007 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Tyngsborough	0	0	0	0	0	0	0	0	$0
Tyringham	0	0	0	0	0	0	0	0	$0
Upton	1	0	1	0	0	0	0	0	$35,000
Uxbridge	5	2	0	3	0	0	0	1	$700
Wakefield	1	0	1	0	0	0	0	0	$0
Wales	Fire Department in Good Standing; Certified No Fire To Report								
Walpole	10	9	0	1	0	0	0	0	$0
Waltham	1	0	1	0	0	0	0	0	$0
Ware	10	1	0	9	0	0	0	0	$5,009
Wareham Fire Districts									
Onset	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Wareham	*3*	*0*	*0*	*3*	*0*	*0*	*0*	*0*	*$0*
Warren	0	0	0	0	0	0	0	0	$0
Warwick	0	0	0	0	0	0	0	0	$0
Washington	0	0	0	0	0	0	0	0	$0
Watertown	0	0	0	0	0	0	0	0	$0
Wayland	1	0	0	1	0	0	0	0	$0
Webster	0	0	0	0	0	0	0	0	$0
Wellesley	2	1	0	1	0	0	0	0	$10
Wellfleet	0	0	0	0	0	0	0	0	$0
Wendell	1	0	0	1	0	0	0	0	$0
Wenham	2	1	0	1	0	0	0	0	$51,000
West Boylston	1	0	0	1	0	0	0	0	$0
West Bridgewater	3	0	0	3	0	0	0	0	$0
West Brookfield	0	0	0	0	0	0	0	0	$0
West Newbury	0	0	0	0	0	0	0	0	$0
West Springfield	14	2	2	10	0	0	0	0	$6,100
West Stockbridge	0	0	0	0	0	0	0	0	$0
West Tisbury	0	0	0	0	0	0	0	0	$0
Westborough	1	1	0	0	0	0	0	0	$2,500
Westfield	5	1	0	4	0	0	0	0	$1,100
Westford	4	1	2	1	0	0	0	0	$2,500
Westhampton	0	0	0	0	0	0	0	0	$0
Westminster	4	1	0	3	0	0	0	0	$1,000
Weston	3	1	0	2	0	0	0	0	$0
Westport	7	1	0	6	0	0	0	1	$56,050
Westwood	2	0	0	2	0	0	0	0	$0
Weymouth	11	3	0	8	0	0	0	0	$1,000

2007 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Whately	10	2	0	8	0	0	0	0	$0
Whitman	53	23	6	24	0	1	0	0	$318,850
Wilbraham	56	27	10	19	0	0	0	0	$112,400
Williamsburg	17	11	1	5	0	1	0	1	$170,000
Williamstown	8	5	2	1	0	0	0	0	$480,850
Wilmington	26	10	13	3	1	0	0	0	$513,000
Winchendon	45	23	9	13	0	0	0	2	$387,700
Winchester	59	19	5	35	0	1	0	0	$116,051
Windsor	2	1	1	0	0	0	0	0	$0
Winthrop	102	54	5	43	0	3	0	0	$1,189,415
Woburn	56	41	10	5	1	0	0	1	$379,300
Worcester	1,389	700	120	569	1	0	0	64	$6,980,441
Worthington	Fire Department in Good Standing; Certified No Fire To Report								
Wrentham	142	14	8	120	0	0	0	0	$119,853
Yarmouth	150	40	20	90	0	0	0	4	$695,666

2007 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Whately	0	0	0	0	0	0	0	0	$0
Whitman	2	2	0	0	0	0	0	0	$24,000
Wilbraham	3	0	0	3	0	0	0	0	$0
Williamsburg	0	0	0	0	0	0	0	0	$0
Williamstown	2	1	0	1	0	0	0	0	$450,000
Wilmington	2	1	0	1	1	0	0	0	$0
Winchendon	1	1	0	0	0	0	0	1	$180,200
Winchester	0	0	0	0	0	0	0	0	$0
Windsor	0	0	0	0	0	0	0	0	$0
Winthrop	11	3	0	8	0	0	0	0	$40,100
Woburn	0	0	0	0	0	0	0	0	$0
Worcester	28	13	6	9	0	0	0	1	$698,000
Worthington	Fire Department in Good Standing; Certified No Fire To Report								
Wrentham	1	0	0	1	0	0	0	0	$0
Yarmouth	19	1	1	17	0	0	0	0	$1,000

2007 Fires By Incident Type

Incident Type	Total Fires	% of Total	Civilian Deaths	Civilian Inj.	Fire Service Deaths	Fire Service Inj.	Dollar Loss
Structure Fires	16,722	50%	47	332	3	564	$268,173,703
Vehicle Fires	3,317	10%	10	20	0	21	14,775,597
Brush Fires	6,602	20%	1	6	0	51	305,002
Outside Rubbish Fires	3,823	11%	0	7	0	20	94,002
Special Outside Fires	1,058	3%	3	7	0	6	485,583
Cult. Veg.& Crop Fires	91	0.3%	0	0	0	1	1,001
Other Fires	1,909	6%	0	22	0	12	3,223,820
Total Fires	**33,522**	**100%**	**61**	**394**	**3**	**675**	**$287,058,708**

2007 Arsons* By Incident Type

Incident Type	Total Fires	% of Total	Civilian Deaths	Civilian Inj.	Fire Service Deaths	Fire Service Inj.	Dollar Loss
Structure Arsons	344	28%	7	21	0	28	$14,108,853
Vehicle Arsons	130	11%	3	0	0	0	602,265
Brush Arsons	439	36%	1	0	0	4	4,983
Outside Rubbish Arsons	124	10%	0	3	0	0	3,821
Special Outside Arsons	136	11%	1	1	0	0	89,400
Cult. Veg.& Crop Arsons	5	0.4%	0	0	0	0	1
Other Arsons	35	3%	0	0	0	0	8,370
Total Arsons	**1,213**	**100%**	**12**	**25**	**0**	**32**	**$14,817,693**

*For statistical purposes in MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

2007 Fires By County

County	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Barnstable	1,056	455	119	482	3	35	0	26	$8,881,422
Berkshire	672	380	62	230	1	12	0	14	8,447,102
Bristol	2,448	752	341	1,355	5	41	0	31	13,635,448
Dukes	35	22	3	10	0	0	0	0	679,500
Essex	3,636	1,694	340	1,602	8	31	0	58	35,930,856
Franklin	329	130	36	163	0	2	0	9	3,426,416
Hampden	2,770	1,434	312	1,024	12	31	0	91	20,453,649
Hampshire	635	287	54	294	0	17	0	9	4,596,419
Middlesex	5,725	3,187	563	1,975	8	61	1	131	53,880,600
Nantucket	51	23	3	25	1	0	0	1	279,000
Norfolk	3,748	1,686	307	1,755	3	26	0	85	17,748,214
Plymouth	2,009	884	268	857	7	35	0	34	32,400,761
Suffolk	5,782	3,517	408	1,857	11	48	2	70	37,984,530
Worcester	4,626	2,271	501	1,854	2	53	0	119	48,714,791
Total	**33,522**	**16,722**	**3,317**	**13,483**	**61**	**394**	**3**	**675**	**$287,058,708**

2007 Arsons* By County

County	Total Arsons	Structure Arsons	Vehicle Arsons	Other Arsons	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Barnstable	74	11	7	56	0	1	0	1	$27,080
Berkshire	30	12	1	17	0	0	0	1	1,586,350
Bristol	139	32	28	79	1	4	0	3	556,100
Dukes	0	0	0	0	0	0	0	0	0
Essex	177	31	12	134	1	0	0	1	161,920
Franklin	18	5	0	13	0	0	0	0	278,000
Hampden	83	22	13	48	5	1	0	6	6,283,900
Hampshire	39	7	0	32	0	0	0	0	215,009
Middlesex	171	64	15	92	1	1	0	2	1,591,328
Nantucket	0	0	0	0	0	0	0	0	0
Norfolk	100	21	5	74	2	6	0	3	607,010
Plymouth	91	28	12	51	0	1	0	6	768,434
Suffolk	140	71	16	53	0	8	0	5	1,089,177
Worcester	150	39	21	90	0	1	0	4	1,653,385
Total	**1,212**	**343**	**130**	**739**	**10**	**23**	**0**	**32**	**$14,817,693**

*For statistical purposes in MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

2007 Fires, Arsons and Deaths By County and By Population*

County	Population	Total Fires	Fires per 1,000 Pop.	Fire Deaths	Deaths per 1,000 Fires	Deaths per 10,000 Pop.	Total Arsons	Arsons per 1,000 Pop.
Barnstable	222,230	1,056	4.8	3	2.8	0.13	74	0.3
Berkshire	134,953	672	5.0	1	1.5	0.07	30	0.2
Bristol	534,678	2,448	4.6	5	2.0	0.09	139	0.3
Dukes	14,987	35	2.3	0	0.0	0.00	0	0.0
Essex	723,419	3,636	5.0	8	2.2	0.11	177	0.2
Franklin	71,535	329	4.6	0	0.0	0.00	18	0.3
Hampden	456,228	2,770	6.1	12	4.3	0.26	83	0.2
Hampshire	152,251	635	4.2	0	0.0	0.00	39	0.3
Middlesex	1,465,396	5,725	3.9	8	1.4	0.05	171	0.1
Nantucket	9,520	51	5.4	1	19.6	1.05	0	0.0
Norfolk	650,308	3,748	5.8	3	0.8	0.05	100	0.2
Plymouth	472,822	2,009	4.2	7	3.5	0.15	91	0.2
Suffolk	689,807	5,782	8.4	11	1.9	0.16	140	0.2
Worcester	750,963	4,626	6.2	2	0.4	0.03	150	0.2
Massachusetts	6,349,097	33,522	5.3	61	1.8	0.10	1,212	0.2

*Population statistics based on 2000 U.S. Census Bureau data.

2007 Non-Fire Responses By County and By Incident Type

County	Total Non-Fire Responses	Overpressure Rupt. & Explos. (No-fire)	Rescue EMS Incidents	Hazardous Conditions (No-fire)	Service Calls	Good Intent Calls	False Alarm Calls	Severe WX[3] & Natural Disaster	Special Incident Type
Barnstable	30,407	54	20,687	1,531	1,973	1,158	3,533	138	163
Berkshire	11,920	18	5,863	957	1,879	522	1,857	41	64
Bristol	45,415	68	24,676	2,469	3,810	3,617	7,907	28	313
Dukes	151	2	10	10	2	1	85	1	0
Essex	69,680	98	34,764	3,947	9,623	4,988	11,894	226	379
Franklin	5,917	13	2,327	437	831	809	767	16	211
Hampden	40,989	129	21,633	1,892	4,347	3,249	6,669	26	183
Hampshire	10,085	27	5,123	680	642	558	2,194	46	84
Middlesex	140,432	172	71,594	9,280	16,212	7,175	24,274	136	5,606
Nantucket	2,168	5	889	179	310	27	704	2	1
Norfolk	72,883	129	41,427	4,344	8,062	4,000	9,980	65	922
Plymouth	42,507	69	24,045	3,312	4,852	2,839	4,970	61	231
Suffolk	89,000	88	38,551	4,281	12,056	13,637	14,241	8	332
Worcester	81,248	159	47,208	5,095	7,689	4,320	10,967	151	691
Massachusetts	642,802	1,031	338,797	38,414	72,288	46,900	100,042	945	9,180

[3] WX is the abbreviation for Weather.

M.G.L. Chapter 148 §26G – Sprinklers in Buildings or Additions

"In any city or town which accepts the provisions of this section, every building of more than seventy-five hundred gross square feet in floor area or every addition of more than seventy-five hundred gross square feet in floor area shall be protected throughout with an adequate system of automatic sprinklers in accordance with the state building code; provided, however, that in the case of said addition, such an adequate system of automatic sprinklers shall be installed in said addition only. No such sprinkler system shall be required unless sufficient water and water pressure exists. For the purposes of this section, the gross square feet of a building or addition shall include the sum total of the floor areas for all floor levels, basements and sub-basements, measured from outside walls, irrespective of the existence of interior fire resistive walls, floors and ceilings.

In such buildings or additions, or in certain areas of such buildings or additions, where the discharge of water would be an actual danger in the event of fire, the head of the fire department shall permit the installation of such other fire suppressant systems as are prescribed by the state building code in lieu of automatic sprinklers, Automatic suppressant or sprinkler systems shall not be required in rooms or areas of a telephone central office equipment building when such rooms or areas are protected with an automatic fire alarm system. Sprinkler systems shall not be required in a one-story building having a fire resistance rating as prescribed in the state building code that is used solely for offices provided the building is protected by an automatic fire alarm system. Sprinkler systems shall not be required in open-air parking structures, defined as: buildings, structures, or portions thereof, used for parking motor vehicles and having not less than twenty-five per cent of the total area open to atmosphere at each level, utilizing at least two sides of the structure. This section shall not apply to buildings or additions used for residential purposes.

The head of the fire department shall enforce the provisions of this section.

Whoever is aggrieved by the head of the fire department's interpretation, order, requirement, direction or failure to act under the provisions of this section, may, within forty-five days after the service of notice thereof, appeal from such interpretation, order, requirement, direction or failure to act to the automatic sprinkler board as provided in section two hundred and one of chapter six."

Communities Which Have Adopted M.G.L. Chapter 148 Section 26G

Abington
Acton
Acushnet
Agawam
Amesbury
Amherst
Arlington
Ashburnham
Ashland
Attleboro
Auburn
Avon
Ayer
Barnstable
Barre
Belchertown
Bellingham
Belmont
Berkley
Beverly
Billerica
Boston
Boxborough
Braintree
Bridgewater
Brockton
Brookfield
Brookline
Burlington
Cambridge
Centerville
Chatham
Chelsea
Chelmsford
Chicopee
Cohasset
Concord
Cotuit
Danvers
Dartmouth Dist. 1
Dartmouth Dist. 3
Dedham
Dighton
Duxbury
East Bridgewater
East Longmeadow
Easton
Edgartown
Everett
Fairhaven
Fall River
Falmouth
Fitchburg
Foxborough
Framingham
Franklin
Gardner
Georgetown
Grafton
Granby
Great Barrington
Groton
Hamilton
Hanover
Hanson
Harwich
Haverhill
Hingham
Holbrook
Holden
Holliston
Holyoke
Hopedale
Hubbardston
Hudson
Hull
Hyannis
Ipswich
Kingston
Lakeville
Lancaster
Lawrence
Leicester
Leominster
Lexington
Lowell
Ludlow
Lunenburg
Manchester
Mansfield
Marblehead
Marlborough
Marshfield
Mashpee
Maynard
Medfield
Medford
Medway
Melrose
Methuen
Middleborough
Middleton
Milford
Millbury
Natick
Needham
Newburyport
Newton
North Andover
North Attleboro
North Reading
Northborough
Norton
Norwell
Orange
Paxton
Pelham
Pittsfield
Plainville
Plymouth
Randolph
Raynham
Reading
Revere
Rockland
Rutland
Salem
Sandwich
Saugus
Scituate
Seekonk
Sharon
Shirley
Shrewsbury
Somerset
Somerville
S. Hadley-Dist. 2
Southborough
Southbridge
Sterling
Stoneham
Stoughton
Sudbury
Sutton
Swampscott
Swansea
Taunton
Tewksbury
Tisbury
Turners Falls
Tyngsboro
Upton
Wakefield
Walpole
Waltham
Ware
Wareham
Warren
Watertown
Wayland
Wellesley
Wenham
West Barnstable
West Boylston
West Bridgewater
West Brookfield
West Springfield
Westborough
Westfield
Westford
Westminster
Westport
Westwood
Whitman
Wilbraham
Wilmington
Winchester
Winthrop
Woburn
Worcester
Wrentham
Yarmouth

Total : 182

M.G.L. Chapter 148 §26H – Sprinklers in Boarding & Lodging Houses

"In any city or town which accepts the provision of this section, every lodging house or boarding house shall be protected throughout with an adequate system of automatic sprinklers in accordance with the provisions of the state building code…The head of the fire department shall enforce the provisions of this section.

For the purpose of this section, 'lodging house' or 'boarding house' shall mean a house where lodgings are let to six or more persons not within the second degree of kindred to the person conducting it, but shall not include fraternity houses or dormitories, rest homes or group home licensed to or regulated by the agencies of the Commonwealth.

Any lodging or boarding house subject to the provisions of this section shall be equipped with automatic sprinklers within five years of the acceptance of this act by a city or town…Whoever is aggrieved by the head of the fire department's interpretation…under the provisions of this section, may within forty-five days after the service of notice thereof, appeal from such interpretation, order or requirement to the board of appeals of the fire safety commission in section two hundred and one of chapter six."

Communities Which Have Adopted M.G.L. Chapter 148 Section 26H

Abington	Dennis	Medway	Stoughton
Acton	Everett	Melrose	Sudbury
Acushnet	Fairhaven	Middleton	Sutton
Amesbury	Fall River	Milford	Swampscott
Amherst	Fitchburg	Natick	Taunton
Arlington	Framingham	Needham	Tewksbury
Ashland	Franklin	Newburyport	Turners Falls
Auburn	Gardner	Newton	Tyngsboro
Ayer	Georgetown	North Andover	Upton
Belmont	Grafton	North Reading	Wakefield
Berkley	Hamilton	Northborough	Ware
Beverly	Hanson	Norton	Warren
Billerica	Haverhill	Pelham	Watertown
Boston	Holyoke	Plainville	Wayland
Braintree	Hopedale	Plymouth	Wenham
Brockton	Hull	Randolph	Westborough
Brookfield	Ipswich	Raynham	Westford
Brookline	Kingston	Revere	Westminster
Burlington	Lancaster	Rutland	Westport
Chatham	Lawrence	Salem	Westwood
Chelsea	Lee	Saugus	Whitman
Chelmsford	Lowell	Scituate	Wilmington
Chicopee	Ludlow	Seekonk	Winchester
Clinton	Lunenburg	Sharon	Winthrop
Cohasset	Mansfield	Somerset	Woburn
Concord	Marlborough	Somerville	Worcester
Danvers	Marshfield	Southborough	Wrentham
Dartmouth Dist. 1	Maynard	Sterling	
Dartmouth Dist. 3	Medford	Stoneham	**Total: 113**

M.G.L. Chapter 148 §26I – Sprinklers in New Dwelling Units (4+ units)

"In a city, town or district which accepts the provisions of this section, any building hereafter constructed or hereafter substantially rehabilitated so as to constitute the equivalent of new construction and occupied in whole or in part for residential purposes and containing not less than four dwelling units including, but not limited to, lodging houses, boarding houses, fraternity houses, dormitories, apartments, townhouses, condominiums, hotels, motels and group residences, shall be equipped with an approved system of automatic sprinklers in accordance with the state building code. In the event that adequate water supply is not available, the head of the fire department shall permit the installation of such other fire suppression systems as are prescribed by the state building code in lieu of automatic sprinklers. Owners of building with approved and properly maintained installations may be eligible for a rate reduction on fire insurance."

Communities Which Have Adopted M.G.L. Chapter 148 Section 26I

Abington
Acton
Acushnet
Agawam
Amesbury
Amherst
Arlington
Ashland
Athol
Avon
Ayer
Barnstable
Barre
Bellingham
Belmont
Berkley
Beverly
Billerica
Boston
Brewster
Brookfield
Brookline
Burlington
Centerville
Chatham
Chelmsford
Clinton
Cohasset
Concord
Cotuit
Dartmouth Dist. 1
Dartmouth Dist. 3
Dedham
Duxbury
E. Longmeadow
Easton
Everett
Fairhaven
Fall River
Falmouth
Fitchburg
Foxborough
Framingham
Franklin
Georgetown
Grafton
Great Barrington
Groton
Hamilton
Hanover
Hanson
Harwich
Haverhill
Hingham
Holden
Holliston
Holyoke
Hopedale
Hopkinton
Hudson
Hull
Hyannis
Ipswich
Kingston
Lancaster
Lawrence
Lexington
Longmeadow
Lowell
Lunenburg
Mansfield
Marblehead
Marlborough
Marshfield
Mashpee
Maynard
Medfield
Medford
Medway
Melrose
Milford
Millbury
Natick
Newton
North Andover
North Attleboro
North Reading
Northborough
Norton
Norwell
Orange
Paxton
Pelham
Plainville
Plymouth
Randolph
Raynham
Revere
Rockland
Rutland
Salem
Saugus
Scituate
Shrewsbury
Somerset
Somerville
S. Hadley-Dist. 2
Southborough
Sterling
Stoneham
Stoughton
Sudbury
Swansea
Taunton
Tewksbury
Tyngsboro
Upton
Wakefield
Walpole
Waltham
Ware
Watertown
Wayland
Wellesley
Wenham
West Barnstable
West Boylston
West Springfield
Westborough
Westford
Westminster
Westport
Westwood
Whitman
Wilmington
Winchester
Winthrop
Woburn
Wrentham
Yarmouth
Total: 115


Wake up and
face the facts
Carbon Monoxide/Smoke Detectors SAVE LIVES!
Or You May NEVER Wake up Again!